

# UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No. 826.1515/JDH

First Named Inventor or Application Identifier:

Hajime KOJIMA, et al.

Express Mail Label No.

## APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO: Assistant Commissioner for Patents  
Box Patent Application  
Washington, DC 20231

1. ☒ Fee Transmittal Form
2. ☒ Specification, Claims & Abstract ..... [ Total Pages: 76 ]
3. ☒ Drawing(s) (35 USC 113) ..... [ Total Sheets: 52 ]
4. ☒ Oath or Declaration ..... [ Total Pages: 4 ]
  - a. ☒ Newly executed (original or copy)
  - b. ☐ Copy from a prior application (37 CFR 1.63(d)) (for continuation/divisional with Box 17 completed)
    - i. ☐ **DELETION OF INVENTOR(S)**  
Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
5. ☐ Incorporation by Reference (usable if Box 4b is checked)  
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.
6. ☐ Microfiche Computer Program (Appendix)
7. ☐ Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary)
  - a. ☐ Computer Readable Copy
  - b. ☐ Paper Copy (identical to computer copy)
  - c. ☐ Statement verifying identity of above copies

## ACCOMPANYING APPLICATION PARTS

8. ☒ Assignment Papers (cover sheet & document(s))
9. ☐ 37 CFR 3.73(b) Statement (when there is an assignee) ☐ Power of Attorney
10. ☐ English Translation Document (if applicable)
11. ☒ Information Disclosure Statement (IDS)/PTO-1449 ☒ Copies of IDS Citations
12. ☐ Preliminary Amendment
13. ☒ Return Receipt Postcard (MPEP 503) (Should be specifically itemized)
14. ☐ Small Entity Statement(s) ☐ Statement filed in prior application, status still proper and desired.
16. ☒ Certified Copy of Priority Document(s) (if foreign priority is claimed)
16. ☐ Other:

## 17. If a CONTINUING APPLICATION, check appropriate box and supply the requisite information:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No: 1

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<b>NEW APPLICATION FEE TRANSMITTAL</b>		Attorney Docket No.	826.1515/JDH
		Application Number	UNASSIGNED
		Filing Date	November 3, 1998
AMOUNT ENCLOSED	\$ 1,712.00	First Named Inventor	Hajime KOJIMA, et al.

**FEE CALCULATION** (fees effective 10/01/97)

CLAIMS	(1) FOR	(2) NUMBER FILED	(3) NUMBER EXTRA	(4) RATE	(5) CALCULATIONS
	TOTAL CLAIMS	34 - 20 =	14	X \$ 22.00 =	\$ 308.00
	INDEPENDENT CLAIMS	10 - 3 =	7	X \$ 82.00 =	574.00
	MULTIPLE DEPENDENT CLAIMS (any number; if applicable)			+ \$270.00 =	0.00
				<b>BASIC FILING FEE</b>	+ 790.00
				Total of above Calculations =	\$ 1,672.00
	Surcharge for late filing fee, Statement or Power of Attorney (\$130.00)				+ 0.00
	Reduction by 50% for filing by small entity (37 CFR 1.9, 1.27 & 1.28).				- 0.00
				<b>TOTAL FILING FEE =</b>	\$ 1,672.00
	Surcharge for filing non-English language application (\$130.00; 37 CFR 1.52(d))				+ 0.00
	Recordation of Assignment (\$40.00; 37 CFR 1.21(h)(1))				+ 40.00
				<b>TOTAL FEES DUE =</b>	\$ 1,712.00

**METHOD OF PAYMENT**

- ☒ Check enclosed as payment.
- ☐ Charge "TOTAL FEES DUE" to the Deposit Account No., below.
- ☐ No payment is enclosed and no charges to the Deposit Account are authorized at this time.

**GENERAL AUTHORIZATION**

- ☒ If the above-noted "AMOUNT ENCLOSED" is not correct, the Commissioner is hereby authorized to credit any overpayment or charge any additional fees necessary to:

Deposit Account No.

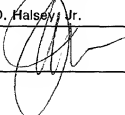
19-3935

Deposit Account Name

STAAS &amp; HALSEY

- ☒ The Commissioner is also authorized to credit any overpayments or charge any additional fees required under 37 CFR 1.16 (filing fees) or 37 CFR 1.17 (processing fees) during the prosecution of this application, including any related application(s) claiming benefit hereof pursuant to 35 USC § 120 (e.g., continuations/divisionals/CIPs under 37 CFR 1.53(b) and/or continuations/divisionals/CPAs under 37 CFR 1.53(b)) to maintain pendency hereof or of any such related application.

**SUBMITTED BY: STAAS & HALSEY**

Typed Name	James D. Halsey, Jr.	Reg. No.	22,729
Signature		Date	November 3, 1998

APPLICATION FOR

UNITED STATES LETTERS PATENT

SPECIFICATION

Inventor(s): Hajime KOJIMA, Toshihiko KAJI,  
and Yasuharu ITO

Title of the Invention: WITNESS SYSTEM

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**WITNESS SYSTEM****Background of the Invention****Field of the Invention**

5       The present invention relates to a Witness system that, using EDI (electronic data exchange), supports account settlement (accounting) and distribution systems among sellers and buyers.

10       **Description of the Related Art**

Today's distribution systems are manifold and, through complex distribution media, carry out the distribution of large quantities of goods. As a result, accounting processes undertaken between  
15       sellers and buyers are equally complex.

The system disclosed in Fig. 1 is representative of conventional account settlement (accounting) systems. First, with each delivery of goods, a buyer examines a delivery voucher sent -- or tendered  
20       contemporaneously on site -- by a seller. Using, illustratively, an internal system in the buying company, the buyer then reduces the details to voucher form, upon which payment to the seller is to be based. This detailed voucher discloses, among other  
25       information, seller's name, delivery date, description

of goods delivered, unit price, quantity, and total price.

The buyer thereafter consolidates and aggregates detailed vouchers according, illustratively, to payment date, and makes a detailed payment statement. The detailed payment statement so made is the result of the above-described consolidation and aggregation of each detailed voucher. Minute details otherwise recorded in a detailed voucher are omitted from the detailed payment statement. By way of illustration, payment date and total price are reflected in the detailed payment statement; more particularized details (e.g., delivery date, description of delivered items, unit price, and quantity), however, are commonly omitted.

As between a buyer and seller trading daily many goods with a payment cycle of one payment per month, for example, detailed vouchers corresponding to delivered volumes are reduced to a single detailed payment statement, and only the aggregated total price is established according to the detailed payment statement.

The buyer, using the above described detailed payment statement, requests that its bank transfer funds in favor of the seller. The bank then makes a

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deposit for the amount specified in the detailed payment statement in favor of the Seller, with respect to whom the request for funds transfer was made, utilizing, illustratively, an inter-bank exchange system. As a result, a seller thus receiving payment learns, through notification from the bank, the amount of money received in the seller's bank account from the buyer.

The following problems are inherent in a conventional system like that described above. Specifically, the detailed payment statement used in the conventional system is a document that compiles in the aforesaid manner multiple delivery vouchers in establishing a total payment amount. A seller is thus unable unilaterally to ascertain which delivery vouchers are reflected in the total amount paid to it by the buyer. This is the result of the omission of delivery date, description of delivered goods, unit price, quantity, and like information, for discrete transactions, from the detailed payment statement.

In such instances, the seller must confirm substantive details with the buyer, in order to verify the amount of money received. Where, for example, the amount of money paid to the seller does not agree with the total amount invoiced, the seller's accounting

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representative must either confirm with the buyer the contents of the detailed vouchers or make discrete inquiries regarding payment amounts. This work places a significant burden on the accounting departments and constitutes a material impediment to enhancing the efficiency of account settlement processing.

Specifically, where a single account settlement for a large transaction is undertaken according to the detailed payment statement, a great deal of time and human effort are required to confirm substantive details recorded therein. And, in settling accounts with high-volume customers, a seller must undertake account settlement in terms of the smallest transaction, i.e., by voucher, in order to set receivables off against payables.

On the other hand, with the popularization of the internet, the construction of EDI-implemented (electronic data exchange) information exchange systems is being tested in all functional disciplines. It is anticipated that use of the system contemplated by the present invention will, particularly as between companies, facilitate more efficient account settlement processing and distribution in complex distribution channels.

### Summary of the Invention

Utilizing EDI (electronic data exchange), the present invention provides a Witness system that ensures information safety, and further provides  
5 account settlement processes making use of said Witness system, in order to perform efficient account settlement processing and distribution.

Specifically, the present invention achieves these objectives by providing a Witness system consisting  
10 of: Document making means for making confirmation documents based on records prepared by and sent from a seller for each seller record; forwarding means for forwarding to a notarization authority documentation made according to said confirmation document making  
15 means and, further, for forwarding said documentation from the aforementioned notarization authority to the aforementioned seller; confirmation means for confirming whether the content of the aforementioned documents forwarded by the aforementioned forwarding  
20 means agree with the content of the aforementioned seller records; a Witness for confirming that the aforesaid documents are correct, upon establishing the aforesaid substantive agreement according to said confirmation means; and memory means for storing in  
25 memory documents confirmed by said Witness.

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Records prepared by and sent from a seller include, by way of illustration, delivery vouchers, written estimates, invoices, and like records. These records are used to identify brand names, quantities, unit prices, and money amounts, when making details concerning goods received by a buyer. "Buyer" and "seller" comprise both public and private enterprises. The system contemplated by the present invention draws no distinction between incorporated and unincorporated entities.

A notarization authority (1) receives details prepared by a seller based, among other things, on delivery vouchers, (2) transmits these details to the seller, and (3) solicits from the seller confirmation that substantive details are in agreement with the content of the delivery vouchers. The Witness receives notification that the seller confirms substantive agreement, whereupon the Witness certifies the aforesaid details as correct documents and confirms said details to the aforesaid buyer and seller.

By constructing the system in this way, details for discrete deliveries prepared by a buyer are confirmed between buyer and seller, as well as by the third-party Witness. These details can be used

effectively as accurate data in account settlement processing.

#### Brief Description of the Drawings

5        Fig. 1 shows, illustratively, a conventional account settlement system.

Fig. 2 discloses the specific structure of the system.

10       Fig. 3 discloses the basic structure of the preferred embodiment of the Witness system.

Fig. 4 discloses the structure that stores in memory media the programs for the illustrative embodiment.

15       Fig. 5 discloses the order in which the computer performs processes J and K, and L and M, respectively.

Fig. 6 shows the login screen.

Fig. 7 shows a screen displaying the start menu.

Fig. 8 discloses the menu bar details.

20       Fig. 9 describes specifically the preferred embodiment.

Fig. 10 presents flowchart describing the processes performed by computer 5.

Fig. 11 presents flowchart describing the processes performed by the Witness PC.

25       Fig. 12 presents a flowchart describing the

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processes performed by computer 6.

Fig. 13 shows the confirmation data list screen.

Fig. 14 shows the data confirmation screen.

Fig. 15 shows the data confirmation screen.

5 Fig. 16 shows the confirmed data list screen.

Fig. 17 shows the confirmed data detail screen.

Fig. 18 shows the payment list screen display.

Fig. 19 shows the payment display screen.

10 Fig. 20 discloses a scaled representation of the comparison process.

Fig. 21 describes represents the account settlement system in the case of funds transfer.

Fig. 22 discloses the set-off process flow.

15 Fig. 23 presents a flowchart describing the set-off process.

Fig. 24 discloses the basic structure of the second alternate embodiment of the Witness system.

20 Fig. 25 describes, with reference to a representative display screen, the processes for the second alternate embodiment.

Fig. 26 describes, with reference to a representative display screen, the processes for the second alternate embodiment.

Fig. 27 shows the login screen.

25 Fig. 28 represents a screen displaying the start

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menu.

Fig. 29 discloses the menu bar details.

Fig. 30 shows the company certificate acquisition screen.

5 Fig. 31 shows the confirmation number display screen.

Fig. 32 shows the terms display screen, which displays the authentication authority terms.

Fig. 33 shows the certification receipt screen.

10 Fig. 34 shows the company registration screen.

Fig. 35 shows the notarization authority terms screen.

Fig. 36 shows the company registration request screen.

15 Fig. 37 shows the company list screen.

Fig. 38 shows the company detail information screen.

Fig. 39 describes a Witness system utilizing a certificate.

20 Fig. 40 describes specifically the second alternate embodiment.

Fig. 41 describes the data format for encoded data.

25 Fig. 42 discloses the notarization data list screen.

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Fig. 43 discloses the notarization data confirmation screen.

Fig. 44 discloses the notarization data confirmation screen.

5 Fig. 45 discloses the notarized data list screen.

Fig. 46 discloses the notarized data detail screen.

Fig. 47 discloses the payment list screen display.

Fig. 48 discloses the payment screen.

10 Fig. 49 describes the account settlement system in the case of funds transfer.

Fig. 50 discloses examples of other encoded data.

Fig. 51 describes processing in the case of payment by check.

15 Fig. 52 describes processing in the case of payment by draft (note).

#### **Description of the Preferred Embodiment**

20 The preferred embodiments of the present invention are hereunder explained using accompanying figures.

Fig. 2 discloses the basic structure of the Witness system's preferred embodiment. The illustrative Witness system consists, fundamentally, of: (1) a buying company, as "buyer"; (2) a selling  
25 company, as "seller"; and (3) the Witness, which

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authenticates, as between buying company 1 and selling company 2, delivery vouchers and similar seller records. A buying company 1 purchases goods from a selling company 2. The buying company is, for example, a large supermarket or store, and the selling company is, for example, a vendor that delivers goods to large supermarkets and like purchasers. The goods delivered to the buying company consist, by way of illustration, of foodstuffs, articles of clothing, daily necessities, and all varieties of commercial goods.

First, buying company 1 sends to the Witness 3 data that buying company 1 wishes to have confirmed by the Witness 3. Exemplary data include that which is recorded on a delivery voucher (see Fig. 2(1)). Having received this data, the Witness first makes record only of the fact that it has received a request, and then sends the request, as is, to selling company 2 (see Fig. 2(2)). Having received the confirmation request, selling company 2 confirms the contents recorded in the aforementioned data and then executes, with respect to the Witness 3, a confirmation response indicating whether selling company 2 agrees with said data (see Fig. 2(3)). The Witness 3 receives the confirmation response and, if

selling company 2 agrees with the recorded contents, transmits to buying company 1 and selling company 2 a confirmation response representing that both parties have verified the aforementioned data (see Fig. 2(4)).

5       The Witness 3 is thus possessed of faculties for undertaking simple recordation of the fact that it has received data from the buying company 1 and for proceeding further to confirm data (confirmation documents) exchanged between the buying and selling  
10       companies. The Witness 3 manages data and performs account settlement (accounting) processes relating, for example, to detailed payment statement making and funds transfers.

15       Fig. 3 discloses the specific structure of this system. In this figure, diagram 5 represents the buying company's computer, and diagram 6 represents the selling company's computer (buying company 1 and selling company 2 are shown in Fig. 2). The Witness  
20       PC 9 corresponds to the aforesaid Witness 3. This Witness PC 9, among other things, confirms delivery voucher data output from the buying company's computer 5, and receives confirmation responses output from the selling company's computer 6.

25       The Witness server 8 comprises: Delivery detail table 20, which preserves in memory documentation

relating, by way of illustration, to delivery vouchers confirmed by monitoring system PC 9; payment terms table 21, which is described hereinafter; and detail group table 22. The above-mentioned computers 5 and 6 can access directly the monitoring system 8 and can refer, illustratively, to the aforesaid confirmation documents.

Additionally, as disclosed in Fig. 4, computer 5 and computer 6 each perform processes described hereinafter according to programs (data) stored, for instance, in CPU RAM or on hard disk. The aforesaid programs may be supplied from either CD-ROM or floppy disk, or, alternatively, from a program (data) provider by means of a circuit.

As disclosed in Fig. 3, the buying company's computer 5 executes requests for confirmation (process J) and executes administrative processing (process K). The aforesaid processes are performed using database 5a and library database 5b (in computer 5). Library interface 5 is used in this case. Similarly, the selling company's computer 6 executes data confirmation requests (process L) and administrative processing (process M). These processes are performed using database 6a (in computer 6) and library database 6b, via library interface 6c. The dotted portions in



Fig. 3 represent a corporate client library, which functions, by way of illustration, as an interface for connecting to a network.

The specification next describes processing in a  
5 Witness system constructed as described above.

Fig. 5 discloses the order of processing when  
computer 5 executes processes J and K, or,  
alternatively, when computer 6 performs processes L  
and M. The display screen transition also is shown  
10 in Fig. 5.

To begin processing for buying company 1, the user  
powers up computer 5, enters network user name and  
password, displays the icon corresponding to this  
system by, for example, clicking the [OK] indication  
15 on the screen, and double-clicks said icon to start  
the system. The same procedure is followed to start  
the selling company's computer 6, as well as the  
Witness PC 9.

The above-described process causes a login screen,  
20 as represented in Fig. 6, to appear on the display of  
computer 5 (and on that of computer 6). This login  
menu is used to start the Witness system disclosed in  
the illustrative embodiment and corresponds to the  
start screen in Fig. 5.

25 By entering a user I.D. and network password and

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activating the login button from this screen, computer 5 (computer 6), for example, checks the user I.D. and password and, if they match, shifts to menu display to display the menu screen. If the cancel button is pressed, the display returns to the previous OS start screen.

Fig. 7 shows the start menu displayed in response to manipulation of the aforesaid login button. Said start screen consists of four buttons (display), 27a-27d, and a menu bar. As Fig. 8 discloses, the menu bar includes a quit bar.

First, each button on the start menu is explained. Button 27a is used when directing the system to perform a confirmation request. Button 27b is used when directing the system to perform a payment list inquiry. Button 27c is used to direct the system to look at confirmed data. Button 27d is used to close the program described in the illustrative embodiment. Each button is activated, for example, by manipulating a mouse so as to position the cursor at any one of the buttons 27a-27d, and then double-clicking the mouse button.

As disclosed above, among the processes that buyer company's computer 5 performs are processes J and K, and among those performed by selling company's

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computer 6 are processes L and M. These processes are specifically explained below.

Confirmation Request Process (Process J):

5        This process is performed by buying company 1 and  
is carried out based on either a delivery voucher,  
order voucher, or invoice, any of which serves as a  
seller record. Specifically, the buying company 1  
10       produces confirmation documents based on a voucher  
sent to it by selling company 2 and then sends the  
documents to the monitor.

Fig. 9 specifically describes this process. Fig.  
10 presents a flowchart explaining the processes  
performed by computer 5. Each time buying company 1  
15       receives goods from selling company 2, the data  
contained in the delivery voucher that buying company  
1 receives is output from computer 5 to the Witness  
PC 9.

As Fig. 9 illustrates, store A, the selling  
20       company 2, delivers to supermarket B, the buying  
company 1, certain foodstuffs and, at that time, sends  
to supermarket B a delivery voucher (or,  
alternatively, tenders the voucher with the goods).  
Computer 5 waits for input of the delivery voucher  
25       (step 1, hereinafter "S1", is N (no)), and, when the

delivery voucher is entered (S1 is Y (yes)), the system performs input processing of the voucher information. As the example presented in Fig. 9 shows, buyer company 1 (supermarket B) produces the

5 aforesaid delivery voucher data as confirmation document X1. Included in this confirmation document X1 are, illustratively, deliverer's name (selling company 1), delivery date, description of delivered goods, and delivered price. The following information

10 is illustrative of that which is reflected in the confirmation document: The aforesaid deliverer is store A; the delivery date is February 10, 1998; the delivered goods consist of tuna; and the delivered price is 1,5000 yen. This confirmation document X1

15 is transmitted (S3) from buyer company 1 to the Witness 3 (see Fig. 9(1)). Buying company's computer 5 thereafter waits for a response with respect to the aforesaid transmitted data (S4).

Fig. 12 presents a flowchart describing the

20 processes performed by selling company's computer 6. The Witness PC 9 waits for the data input from the aforesaid computer 5 (S5 is N (no)), and, when the input is available (S5 is Y (yes)), confirms the content of the input data (S6) and, where, for

25 example, the data supplied to the monitor PC 9

correspond to the above described confirmation document X1, said confirmation document X1 is registered in detail table 20, described above (S7) (see Fig. 9(2)). Confirmation document X1 is then  
5 output, as is, to selling company's computer 6 (S8).  
Data Confirmation Process (Process K)

Fig. 12 is a flowchart describing the process that selling company's computer 6 performs. As described above, computer 6 waits for the confirmation document  
10 X1 input sent from the Witness PC 9 (S9 is N (no)), and, when confirmation document X1 is input (S9 is Y (yes)), compares confirmation document X1 with the contents of the delivery voucher that it previously sent (or tendered with delivery) (S10). It also  
15 checks to for the presence of errors in the contents of the delivery voucher. As noted above, it is selling company 2 that performs this error-checking task. A "buying company" with whom selling company 2 places its goods is, however, not strictly limited  
20 to a specific company (the aforesaid buying company 1). Accordingly, when undertaking the above-described error-checking task, selling company 2 presses the confirmation request button on the computer 6 start menu (see Fig. 7) and displays the confirmation data  
25 list screen shown in Fig. 13.

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Fig. 13 is illustrative of the result following manipulation of retrieve button 40a, located on the confirmation data sight screen, and subsequent selection of "supermarket B". To confirm this certification, selling company 2 presses detail button 40b and displays the detail screen. Pressing the quit button 40c restores the above-described start menu.

Here, the aforesaid detail button 40b is pressed, and the detail screen depicted in Fig. 14 appears. While looking at this screen, selling company 2 compares the content of the confirmation document X1 sent by the monitor 3 with the content of the delivery voucher, or similar document, issued by selling company 2 (S10). Selling company 2 then determines whether there are any errors (S11). Here, if both documents are in substantive agreement, selling company 2 presses confirmation button 41a. The confirmation data is then produced and transmitted to the Witness PC 9 (S11 is Y (yes), S12, and S13) (see Fig. 9(4)).

If, on the other hand, it is determined that the aforesaid delivery voucher, or similar document, and the confirmation document X1 differ substantively (S11 is N (no)), selling company 2 presses NG button 41b, shown in Fig. 14, and produces the display disclosed

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in the same figure. Specifically, selling company 2 in this case describes the reason for the NG condition (S14), presses OK button 41, shown in Fig. 14, and sends a NG response to the Witness PC 9 (S15).

5           When this NG response is available (S5 in Fig. 11, is Y (yes)), the Witness PC 9 judges the contents of the input data (S6) and, in the case of a NG response, sends this information, as is, to buying company's computer 5 (S16). The Witness system thereafter waits  
10       for correction data input (S17). Buying company's computer 5 thus waits for the receipt of data (S4) and, in the case of a NG response when the response data is input (S18, see Fig. 10, is Y (yes)), undertakes correction corresponding to confirmation  
15       document X1 (S19). The corrected data is sent a second time to the Witness PC 9 (S20), and receipt detail table 20 of the Witness PC 9 is corrected (S17 is Y (yes), S21). Specifically, selling company 2 is able to: learn of an error or errors in the details  
20       generated by buying company 1; notify buying company 1 of the error or errors; and (3) by, for example, correcting the content of the details, update the contents of receipt detail table 20, thereby enabling the of accurate details (see Fig. 9(5)).  
25           The process described above is performed each time

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a delivery voucher is sent between buying company 1 and selling company 2, and several authentication documents are registered in the delivery receipt detail table 20 shown in Fig. 9. If, as represented in Fig. 9, the delivering company is store A, the delivery date is February 11, 1998, the item delivered is saury, and the delivered price is 10,000 yen, a confirmation document X2, for example, is registered in the delivery detail table 20 according to the same process.

Where selling company 2 determines that there are no substantive errors as between its delivery voucher and the confirmation document X1, and selling company 2 sends a confirmation response to the Witness PC 9, the Witness PC 9 confirms the content of the input data (S5 and S6, shown in Fig. 11), and the Witness PC 9 notifies buying company 1 and selling company 2 that the data has been confirmed by both parties (S22)

Specifically, when the Witness 3 has a "confirmation completed" input from selling company 2, it transmits to buying company 1 and selling company 2 verification-completed confirmation documents A and B, relating, for example, to the above-mentioned confirmation documents X1 and X2 (see Fig. 9(6)). The information thus transmitted from the Witness 3 is



confirmed by both buying company 1 and selling company 2 and serves to verify that there is no substantive error in a confirmation document based, for example, on a delivery voucher.

5       When the confirmation process is completed as described above, confirmation documents based on several delivery vouchers are registered in the receipt detail table 20.

10       To refer in this state to data that have been confirmed and registered in the receipt detail table 20, the user presses the confirmed data list button 7c, thereby shifting the display from the start menu configuration to the confirmed data screen represented in Fig. 16. This confirmed data list screen enables  
15       the user to select, from among several customers, a customer with which the user has current transactions, such as, by way of illustration. "OO Foods Company", "XX Ham Company", or "ABC Company". The user can also specify and select items in classification areas, such  
20       as "wholesale", "set-off", "orders", "accounts receivable", "payment corrections", and "contracts". Pushing button 45a, moreover, displays the confirmed data detail screen, shown in Fig. 17.

25       Fig. 17 discloses the detail screen that appears when, by way of illustration, "orders" is selected as

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the aforesaid classification item. As is shown in that figure, detailed information relating to the selected classification item is displayed, and the user is able to review in detail such specific authentication information as item name, quantity "10", unit cost "100 yen", and total cost "1000 yen". Office Administration Processing (Processes L and M)

The specification next explains office administration processing. Office administration processing (process L) includes payment corrections, payment detail display, and like varieties of administrative processing. The payment correction process involves the correction of price or description of goods, pursuant to an indication of discrepancy made by selling company 2. Price establishment processes comprise, illustratively, responsive processes that are performed by confirming a detailed payment statement made by the Witness 3, and processes for outputting detailed payment statements that buying company 1 itself has made. These processes are specifically explained below.

Fig. 18 represents a payment list screen appearing, for example, on computer 5. This payment list screen can be displayed by pushing the payment list inquiry (reference) button 27b, thus bringing

about a transition from the start menu configuration shown in Fig. 7. This payment list screen is generated by the Witness 3. By selecting payor, one is able to select from among several possibilities a company with which the user has current transactions (e.g., "OO Foods Company", "XX Ham Company", or "ABC Company"). Similarly, a payee can be specified, and, by specifying a date certain, a payment list screen showing that date as the due date is displayed.

Displayed on this detailed list screen are the delivery date recorded on the payment voucher, voucher number, store name, wholesale price, and discount rate. An operator can specify another payment voucher about which information is desired, and, by pressing detail button 44a, can shift to the detail screen shown in Fig. 19.

The illustration in Fig. 19 represents a payment voucher issued against "OO Foods Company", pursuant to which payment to "ABC Company" is due no later than August 12, 1997. When an operator at either buying company 1 or selling company 2 displays this information, the system investigates the product name, unit weight, quantity, unit price, and total price, and, in case of doubt, checks each detail registered in the above-mentioned receipt detail table 20. If,

for example, the total amount is different from the total amount based on the delivery voucher in the operator's possession, each detail registered in the receipt detail table 20 is confirmed.

- 5 In this case, the system would refer to registered confirmation data residing in the receipts detail table 20. Specifically, by pushing the confirmed data button 7c from the start menu shown in Fig. 7, the aforesaid list screen, shown in Fig. 16, is displayed.
- 10 It is also possible to cross-check payment data by displaying the confirmed data detail screen.

- Making of the detailed payment statement is undertaken, for example, by the Witness 3, and completed by referring to the payment terms table 21.
- 15 According to prior arrangement between buying company 1 and the Witness 3, or between selling company 2 and the Witness 3, information such as closing date, payment date, and deposit account number are for each company registered in the payment terms table.
- 20 Additionally, each detail is numbered, and, to make data checking more convenient for buying company 1 and selling company 2, a detail group table 22, which groups the detail numbers, is provided.

- Fig. 20 presents a scaled drawing of the cross-checking process described above. Selling company 2
- 25

performs cross-checking of detailed information with the Witness 3 (see Fig. 20(1)) and, referring to either the receipts detail table 20 or the payment terms table 21, obtains the necessary detailed information (see Fig. 20(2)). On the other hand, buying company 1, also, performs cross-checking of detailed information with the Witness 3 (see Fig. 20(3)), as required, and, referring to either the receipts detail table 20 or the payment terms table 21, obtains the necessary detailed information (see Fig. 20(4)).

Next, the Witness 3 specifies the deposit account of the accounting department (i.e., a designated bank) and makes a request for deposit, based on the aforesaid detailed payment statement (see Fig. 9(7)). Here, using Fig. 21, the specification explains the deposit and cross-checking processes.

Documents authenticated in the above-described manner are registered in the Witness server 8. First, the Witness 3 makes the detailed payment statement based on data registered in the receipts detail table 20 and then requests confirmation from buying company 1 (see Fig. 21(1)). Buying company 1 confirms the detailed payment statement sent to it and returns the statement as its request for funds transfer (see Fig.

21(2)). At this time, a delivery voucher index corresponding to the detailed payment statement is assigned to said statement.

5 The aforesaid funds transfer request is delivered to the Witness 3 and forwarded to a bank (not shown in the instant drawing) (see Fig. 21 (3)). The information that the Witness 3 sends to the bank as the Witness' instruction for funds transfer comprises the money amount, transferor, transferee, and the  
10 detail index. Having been so instructed to transfer funds, the bank transfers funds to selling company's transaction bank, utilizing a suitable banking system, such as an inter-bank transfer system. The paying bank notifies selling company 2 of payment (see Fig.  
15 21(4)).

By undertaking processing as described above, neither buying company 1 nor selling company 2 is required to hold several vouchers or invoices. Additionally, it is possible to perform efficient  
20 account settlement using data shared with the Witness server 9,

First Alternate Embodiment:

The specification next describes the first alternate embodiment of the present invention. If  
25 buying company 1 and selling company 2 were to change

places, processing efficiency would be impaired if respective detailed payment statements were made in the same manner as that contemplated in the preferred embodiment. This illustrative embodiment performs  
5 set-off processing and makes a detailed payment statement (suitable to the aforesaid contingency).

Accordingly, the system structure disclosed in Figs. 2 through 4, as well as the illustrative screen progression shown in Fig. 5, are the same as those in  
10 the preferred embodiment. The making of confirmation document X based on delivery vouchers from selling company 2 is the same as that undertaken in the preferred embodiment. The confirmation process at  
15 selling company 2, as well as the authentication processes performed by the Witness 3 are the same. A plurality of authenticated data are registered in the detail receipts table 20 of the Witness server 8, and the Witness 3 makes detailed payment statements  
20 matched to payment dates in the payment terms table 21.

Fig. 22 discloses the set-off process flow for the illustrative embodiment. Fig. 23 is a set-off process flowchart. The illustrative embodiment performs set-off where, according to the relationship between the  
25 aforesaid buying company 1 and selling company 2,

buying company 1 bears a payment obligation with respect to selling company 2, and, at the same time, selling company 2 bears a payment obligation because, for example, it has purchased distinct goods from buying company 1. In this case, the system extracts all details relevant to buying company 1 and buying company 2 registered in delivery detail table 20 "vendor" and "buyer" columns (Step 1, hereinafter "ST" in Fig. 23). Respective payment amounts are displayed (ST2), the money amount where buying company 1 is the buyer and selling company 2 is the vendor is added (+), the money amount where selling company 2 is the buyer and buying company 1 is the vendor is subtracted (-), and the set-off amount is calculated (ST3).

15 The payment amount relating to mutual trade between buying company 1 and selling company 2 is thus set-off according to the above calculation, and, in the preceding illustration, if the total money amount carries a positive (+) value, buying company 1 pays to selling company 2 the resultant money amount (ST4 is Y (yes), ST5). If, on the other hand, the total money amount carries a negative (-) value, selling company 2 pays to buying company 1 the resultant total money amount (ST4 is N (no), ST6).

25 The money amount thus derived is reduced to a

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detailed payment statement, and, as described above, the Witness 3 specifies the accounting department (i.e., a designated bank) receiving account and executes a funds transfer request based on the aforesaid detailed payment statement (see Fig. 22 (1)). By performing processing as described above, it is possible to reduce the number of detailed payment statements and to make detailed payment statements with greater efficiency.

10 Set-off for payment amounts as between buying company 1 and selling company 2 is not limited to the foregoing illustrative embodiment, but is amenable to other methods as well.

#### Second Alternate Embodiment

15 The specification next describes the second alternate embodiment of the present invention.

The second alternate embodiment is an invention for safely performing account settlement in an account settlement system utilizing the Witness. This illustrative embodiment performs processing in accordance with authentication numbers after authenticating buying company 1 and selling company 2 in advance. Furthermore, the illustrative embodiment encodes data sent and received between 25 buying company 1 and the Witness, or, alternatively,

between selling company 2 and the Witness, and ensures the protection of data. This illustrative embodiment is explained below.

Fig. 24 discloses the specific structure of this system. In this figure, 5 represents the computer of buying company 1, which is the same as that in the preceding illustrative embodiments, and 6 represents the computer of selling company 2. The notarization authority 7 and the Witness server 8 correspond to the aforesaid Witness 3 and are included in the Witness PC 9. The Witness PC 9 includes an authentication authority 24, which authenticates in advance the companies that participate in this system. Additionally, the Witness PC 9 in this illustrative embodiment notarizes (certifies) delivery voucher and like data output from buying company's computer 5, and also receives confirmation responses output from selling company's computer 6.

The Witness server 8 consists, among other things, of: detailed receipts table 20, which stores notarization documents, illustratively comprising delivery receipts notarized by the Witness PC 9; payment terms table 21; and detailed group table 22. The aforesaid computer 5 and computer 6 can access directly the Witness server 8, to refer to the above-

mentioned notarization documents and like documents.

As disclosed in Fig. 24, buying company's computer 5 performs company certificate acquisition (process A), company registration processing (process B), notarization request processing (process C), and office administration processing (process D). Selling company's computer 6, on the other hand, performs company certificate acquisition (process E), company registration processing (process F), notarization data confirmation processing (process G), and office administration processing (process H).

The authentication authority 24 executes authentication of certification requests issued in regard to the corporate certificate acquisition processes (viz., process A and E) undertaken by buying company's and selling company's computers (computer 5 and computer 6, respectively). Similarly, the notarization authority 7 performs notarization of certificate issue registration requests issued in regard to company registration processing (viz., process B and F) carried out by buying company's and selling company's computers (computers 5 and 6, respectively).

Figs. 25 and 26 describe, in parallel with the representative screens that would appear on the

display, the processes of this illustrative embodiment. A specific explanation follows.

In this illustrative embodiment, computers 5 and 6 and the Witness PC 9 are powered up, and the Witness system program is started.

Through this process, a login screen, represented in Fig. 27, appears on the computer 5 (or computer 6, for that matter) display. This login screen is used to open the monitor system in this illustrative embodiment and corresponds to the start screen in Fig. 25. As with the previously described embodiments, entering a user I.D. and password and pressing the login button in the login screen causes computer 5, for example, to confirm the user I.D. and password. If the user I.D. and password are in agreement, the system transitions to menu display and brings up the menu screen. Pressing the cancel button returns the system to the previous, initial operating system screen.

Fig. 28 represents the initial menu screen displayed when the login button is pressed. The initial menu comprises four buttons (display), 10a through 10d, and menu bar 11. Fig. 29 discloses details of the menu bar 11. Button 10a is pressed to instruct the system to confirm notarization requests.

Button 10b is pressed to instruct the system to retrieve a payment list. Button 10c is pressed to instruct the system to list notarized data. Button 10d is pressed to quit the program in this illustrative embodiment.

As shown in Fig. 28, The menu bar 11 consists of quit bar 11a, company registration 11b (company certificate acquisition bar 11b', company registration bar 11b"), company information bar 11c, environment settings bar 11d, and version information bar 11e. The alphabetic characters (X, E, I, S, A) assigned respectively to each of the bars are used when designations (specifications) are made via the keyboard.

As described above, buying company's computer 5 performs processes A through D, and selling company's computer 6 performs processes E through H. These processes are described specifically below.

Company Certificate Acquisition Processes  
(processes A through E)

These are processes for admission to the system and must be performed initially when, for example, this system is adopted. Designation of these processes is accomplished by selecting the company certificate acquisition bar in the menu screen shown

in Fig. 29 (Fig. 28) and displaying the company certificate acquisition screen shown in Fig. 30. As described above, the company certificate acquisition process (process A) is a process for registering companies participating in the Witness system in the illustrative embodiment and designating company registration numbers for companies whose company certificates are to be acquired, URL for the authentication authority, server name, and the type of certificate.

Next, if there are no problems with respect to the entered company registration I.D., authentication authority's URL, or server name, the certificate request button 12a is pressed, producing the confirmation number display screen. When the quit button 12b is pressed, the display restores the initial menu shown in Fig. 28.

Fig. 31 discloses the confirmation number display screen. After confirming the displayed number, the operator presses the "next" button 13a and displays the authentication authority terms. In this case, too, pressing the cancel button 13b restores the company certificate acquisition screen shown in Fig. 30.

Fig. 32 discloses the provisions display screen,

indicating the certification authority terms. Among these terms are, illustratively, regulations pertaining to admission to this system. The operator reads the terms and, if the operator agrees therewith, presses the consent button 14, or, conversely, if the operator is unable to agree, presses the cancel button 14b. When the acceptance button 14a is pressed, the display shifts to the next certificate acquisition screen.

Fig. 33 discloses the certificate acquisition screen. Company name, address, and other information relating to company in question are recorded in the corresponding areas therein, and the application request is made. After confirming that there are no mistakes in each of the entries, the application request is executed by pressing the application request button 15a. The aforesaid authentication authority registers the company pursuant to this request.

Company Registration Processing (processes B and F)

Company registration processing is performed after company certificate acquisition processing is completed as described above.

Fig. 34 discloses the company registration screen, which can be displayed by pressing the company

registration bar 11b" in the start menu. This company registration process registers participating companies with the notarization authority 7 and designates the notarization authority 7 URL, server name, and the monitor I.D. (it is permissible, moreover, to abbreviate the server name and the monitor I.D.). This process also designates company registration I.D. for participating companies.

Next, if there is no problem with, illustratively, the designated company registration I.D., the notarization authority 7 URL, and server name, registration number button 16a is pushed, producing the terms screen for the notarization authority 7. Pressing the quit button 16b restores the start menu screen.

Fig. 35 discloses the notarization authority terms screen. This screen, like that for the certification authority terms, presents, by way of illustration, regulations respecting admission to the system, confirmation items, and like entries. The operator read these terms and, if the operator agrees therewith, presses the consent button 17a, or conversely, if the operator is unable to agree, presses the cancel button 17b. When the consent button 17a is pressed, the display shifts to the next



company registration request screen.

Fig. 36 discloses the company registration request screen, through which, company name, address, and other information relating to the company in question are recorded and the application request is executed. After confirming that there are no errors in each of the aforesaid entries, the request is executed by pressing the application request button 18a (the cancel button 18b is pressed to terminate the request process).

The notarization authority 7 registers companies with the Witness server, pursuant to the above-described process.

#### Company List Display

Once each company has, as described above, executed registration with the notarization authority 7 and the authentication authority 8, registration data for a plurality of companies are registered in the Witness server 9. Then, pursuant to user designations, the system is capable of displaying a list of registered companies.

This company list is displayed by pressing the company information bar 11c from the start menu. Fig. 37 discloses the registered company list display screen, on which is displayed registered company I.D.,

company name, and registration date. In this illustration, company name "OO Foods Company" has been registered in area 1, company name "XX Ham Company" in area 2, and "ABC Company" in area 3. If there exists a company that a user wishes to examine in greater detail, the user specifies the company name and presses the detail button 19a, after displaying the above-described screen.

Fig. 38 discloses the company detailed information screen that is displayed by pressing detail button 19. This display consists of company I.D., company name, address, signature certification information, and encoding certificate information. If, for example, the company name "ABC Company" registered in area 3 (see Fig. 28) is selected, the I.D. for "ABC Company" is registered in the company I.D. area, and the address for "ABC Company" is registered in the address area. Information to be registered with the "ABC Company" notarization authority is displayed in the signature certification information area, and the user can observe, for example, that certificate number 20 was issued on November 9, 1997, and that a registration valid through May 10, 1998 has been executed.

When the authentication process for companies

participating in the system (e.g., buying company 1 and selling company 2) is completed, an encoding process is next performed.

5     Notarization Request Process (Process C)

          This is a process performed by buying company 1 and is carried out based on such seller records as a delivery voucher, an order voucher, or an invoice. Specifically, it is a process wherein buying company  
10     1 makes notarization documents, based on any one of the vouchers sent to it by selling company 2, and seeks notarization from the Witness 3.

          It is Fig. 39 that specifically describes this process. Fig. 39 is a scaled representation of the  
15     authentication process, which is executed by attaching the above-described certificate received by buying company 1 and selling company 2. Buying company 1 appends to the authentication document the certificate [A] for buying company 1 and sends these documents to  
20     the Witness 3 (process (1) in Fig. 39). The Witness 3 sends the authentication documents thus received, as is, to selling company 2 for confirmation (process (2) in Fig. 39). Selling company 2 checks the documents sent to it and, after confirming,  
25     illustratively, that the documents are in agreement

with the content of a delivery voucher, attaches its certificate [B] and sends the documents to the Witness 3 (process (3) in Fig. 39). In addition to registering the authentication document data in the receipts detail table 20, the Witness 3 sends to both buying company 2 and selling company 1 notification that the Monitor has authenticated the authentication documents (process (3) in Fig. 39). This process is executed by appending the Witness' 3 certificate [C]. By thus appending the certificate to each document forwarded, the notarization authority 7 (Witness 3) is at once able to confirm at all times that the documents are those of companies eligible to participate in the system and to execute safe procedures.

Fig. 40 is used to advance a specific explanation.

First, store A delivers foodstuffs to supermarket B, the buying company, and contemporaneously sends (or tenders on site) a delivery voucher. Selling company 1 (supermarket B in this example) prepares data for use as a notarization document Y. Included in the notarization document Y are the deliverer's name (selling company 2 in this example), delivery date, description of delivered goods, and delivery price. Illustrative entries are as follows: deliverer's

name/ "store A"; delivery date/"February 10, 1998";  
description of delivered goods/"tuna"; delivery  
price/"15,000 yen". The notarization document Y is  
transmitted from buying company 1 to the Witness 3  
5 (see Fig. 40(1)). The notarization document Y sent  
from buying company 1 to selling company 2 is first  
encoded.

Fig. 41 is representative of this process. Here,  
a notarization document Y is sent from company U to  
10 company V. Adapting this scenario to the above  
illustration, the portion shown as "a" in the figure  
corresponds to a message relating to the sending of  
notarization document Y from buying company 1 to  
selling company 2. Specifically, DATA shown in Fig.  
15 41 corresponds, illustratively, to the deliverer's  
name and delivery date data, mentioned above. These  
data are encoded by means of DES, a hash function  
(SHA) is applied, further secured with buying  
company's secrecy key (SKA), and sent to the  
20 notarization authority 7. A public access key (PKA)  
for the (SKA) is also sent with the data. The data  
are secured with buying company's secrecy key (SKA)  
to enable confirmation at selling company 2 that the  
message has been sent.

25 The totality of transmission data sent from

company U to company V is secured by locking with company U's secrecy key (SKU) a (message) to which a hash function (SHA) has been applied. This is further locked by DEK, which, in turn, is further secured by locking DEK corresponding to DES with company V's public access key (PVK). Locking with company V's public access key (PKV) ensures that the body of transmission data is susceptible of deciphering by company V only. Specifically, the body of transmission data is sent from buying company 1 to selling company 2.

#### Notarized Data Confirmation Process (Process G)

Next, the Witness 3 sends the aforesaid notarization document Y to selling company 2, the sender of the delivery voucher, and executes a confirmation request (see Fig. 40(3)). Selling company 2 compares the content of the notarization document Y transmitted from the Witness 3 with, illustratively, the content of a delivery voucher that selling company 2 itself issued, checking for errors. The above-described data is unlocked by means of the aforesaid public access key.

Selling company 2, which has received the totality of transmission data, first unlocks the data with the secrecy key (SKV) corresponding to the public access

key (PKA), obtains the DEK, unlocks the DES by means of the DEK, and then, as described above, utilizes buying company's public access key.

5       The confirmation task is, as above explained, performed by selling company 2. A buying company to which selling company 2 delivers goods is, however, not limited to the company prescribed above (buying company 1). Accordingly, when performing the aforesaid confirmation task, selling company 2 presses  
10      the notarization request confirmation button 10a in the computer 6 start menu (see Fig. 28), thereby displaying the notarized data list screen, disclosed in Fig. 42.

15      Fig. 42 illustrates a scenario wherein "supermarket B" is selected by manipulating the search button 20a on the notarized data list screen. To confirm this certificate, selling company 2 presses detail button 20b, thereby displaying a detail screen.

20      When the detail button 20b is thus pressed and the detail screen displayed, the detail screen depicted in Fig. 42 appears. While observing this screen, selling company 2 confirms the content of the notarization document Y1, transmitted to it from the monitor 3, with the content of, illustratively, a  
25      delivery voucher that selling company 2 itself issued,

checking for errors. If the contents are in agreement, OK button 21a is pressed, and a completion (message) is transmitted to the Witness 3 (see Fig. 40(4)).

5       The confirmation response sent by selling company 2 to the Witness 3 corresponds to that which is designated "b" in Fig. 41. Specifically, the encoded data for the aforesaid notarization document Y1 is secured by means of a hash function (SHA) and selling  
10       company's secrecy key (SKB), and then sent to the notarization authority 7. A public access key (PKB) corresponding to the secrecy key is sent simultaneously to the notarization authority 7.

15       If it is determined that the content of the notarization document Y1 is not in accord with, illustratively, the content of a delivery voucher, confirmation NG button 21b shown in Fig. 43 is pressed, resulting in the display represented in the same figure. Specifically, the operator describes the  
20       reason the reason for NG and presses OK button 22a. In this case, the Witness 3 notarizes no details, and, at this point, Seller 2 learns that there is an error, or that there are errors, in the details prepared by Buyer 1. Seller 2 notifies Buyer 1, and, as the  
25       content of the details are revised, the receipts

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detail table 20, for example, is updated, thereby enabling Buyer 1 to produce accurate notarization details (see Fig. 40(5)).

Once the Witness 3 has a confirmation response  
5 from selling company 2, it transmits to selling company 2 and buying company 2 a confirmed certificate relating to the notarization document Y1 (see Fig. 9(6)).

The certificate that selling company 2 sends at  
10 this time to the Witness 3 corresponds to that which is designated as "c" in Fig. 41. Specifically, it is a message secured by means of (1) a hash function (SHA) applied to encoded data relating to notarization document Y1 and (2) the monitor's 3 secrecy key (SKN).  
15 An access key corresponding to said secrecy key (SKN) is at this time sent to both buying company 1 and selling company 2.

Thus, decoded information sent from the Witness 3 constitutes a certificate that has been confirmed  
20 mutually by buying company 1 and selling company 2, and further constitutes a notarization document certifying that there are no substantive errors in the authentication document based, illustratively, on a delivery voucher. As the notarization process is thus  
25 completed, a plurality of certificates are registered

in the receipts detail table 20.

System users can consult notarized, registered data residing in the receipts detail table 20 by pressing start menu (see Fig. 28) button 10c, which enables viewing of the notarized data list. The resulting notarized data list screen is disclosed in Fig. 45. The notarized data list screen allows the user, for example, to select "customer" and then specifically identify, illustratively, "OO Foods Company", "XX Ham Company", "ABC Company", or any buying company 1 with which the selling company currently has transactions. The user can also select matters that the user wishes to confirm by specifying items in the classification areas "wholesale", "set-off", "orders", "accounts receivable", "payment corrections", and "contracts". Pressing detail button 25 displays the notarized data detail screen shown in Fig. 46.

Fig. 46 represents the detail screen displayed when the classification item "orders" is selected. As shown in Fig. 46, detailed information for the selected item is displayed, facilitating review of specific authentication details including, illustratively, product name, quantity ("10 pieces" in this example), unit price ("100 yen" in this

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example), and total price ("1000 yen" in this example).

Office Administrations Processes (Processes D and H)

5       Next, the specification describes the office  
administration processes. Among the office  
administration processes (process D) are payment  
correction, payment detail display, and various  
varieties of like processes. Payment correction  
10 facilitates correction, for example, to the price or  
description of goods appearing in the authentication  
document, pursuant to notification of error received  
from selling company 2. Price settlement includes,  
for example, a response process executed by confirming  
15 detailed payment statements prepared by the Witness  
3, and a process wherein detailed payment statements  
prepared by buying company 1 itself are output. These  
processes are explained specifically below.

Fig. 47 discloses, by way of illustration, the  
20 payment list screen appearing on the computer 5  
display. This payment list screen is displayed by  
pressing the payment list inquiry button 10b in the  
start menu, shown in Fig. 30. The payment list screen  
is generated by the Witness 3, and, by selecting the  
25 payor, the user can select, for example, "00 Foods

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Company", "XX Ham Company", "ABC company", or any  
payor with whom the user conducts business. Also,  
when a payee is in the same way designated and a date  
specified, that date is displayed as the payment date  
5 in the payment list.

The delivery date relating to the payment voucher,  
voucher number, store name, wholesale price, and  
discount rate, are displayed on this detailed list  
screen. By specifying a payment voucher about which  
10 more information is desired and pressing detail button  
24a, the operator can shift to the detail screen  
represented in Fig. 48.

Fig. 48 is an illustrative screen showing a  
payment voucher requiring payment from payor "00 Foods  
15 Company" to payee "XYZ Company" not later than August  
12, 1997. With this information displayed, the buying  
company 1 operator, or the selling company 2 operator,  
investigates product name, unit weight, quantity, unit  
price, total price, and like information, and, in case  
20 of any doubt, confirms each detail registered in the  
aforesaid receipts detail table 20. If, for example,  
the total amount differs from the amount determined  
based on the delivery receipt in the operator's  
possession, the operator checks each detail registered  
25 in the receipts detail table 20.

In this case, the operator would review the notarized, registered data residing in the receipts detail table 20. Specifically, the operator displays the aforesaid list screen shown in Fig. 45, by pushing the notarized data list button 10c from the start menu shown in Fig. 28. Further, the operator can display the notarized data detail screen and review payment data.

The detailed payment statement, which, by way of illustration, can be prepared by the Witness 3, is produced with reference to the payment terms table 21. Due date, payment date, receiving account, and like information are for each company registered in the payment terms table 21, by prior arrangement between buying company 1 and the Witness, or between selling company 2 and the Witness 3. Furthermore, each detail is assigned a detail number in the receipts detail table 20, and, for convenient review by either buying company 1 or selling company 2, a group table 22, grouping detail numbers, is prepared.

Based on the aforesaid detailed payment statement, the Witness 3 next specifies the accounting department (i.e., a designated bank) receiving account and executes a funds transfer request (see Fig. 40(')). Fig. 50 describes the funds transfer process.

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The Witness 3 prepares the detailed payment statement based on the data registered in the receipts detail table 20 and requests confirmation from buying company 1 (see Fig. 49(1)). Buying company 1 confirms the detailed payment statement sent to it by the Witness 3 and returns said detailed payment statement as a funds transfer request (see Fig. 49(2)). At this time, a delivery voucher index corresponding to the detailed payment statement in question is assigned to said detailed payment statement.

The above-described funds transfer request is delivered to the Witness 3, via the notarization authority 7 (see Fig. 49 (3)), and transmitted to the bank, which is not represented in the instant figure. The funds transfer instruction sent by the Witness 3 to the bank consists of the money amount, transferor, transferee, and the detail index. Having received the funds transfer instruction, the bank transfers funds to the appropriate account at selling company's transacting bank, utilizing a suitable banking system (e.g., the inter-bank exchange system described above). The paying bank issues a payment notification to selling company 2 (see Fig. 49(4)).

By performing processing as described above, buying company 1 and selling company 2 are not

required to hold several delivery vouchers and invoices and can execute efficient account settlement processing by sharing and using information provided by the Witness server 9.

5       Data transmitted (sent and received) among buying company 1, selling company 2, the notarization authority 7, and the Witness, are encoded and prepared as necessary to suit their respective transmission purposes. The illustrative data shown in Fig. 50 are prepared for the purpose of substantive disclosure by 10       buying company 1 [A] to both selling company 2 [B] and the Witness [W]. In this case, the data have been locked (secured) in advance with the selling company's public access key (PKB), which is held by buying 15       company 1, and the Witness' public access key (PKW). The data are further secured with a hash function and buying company's secrecy key (SHA), and then sent with a public key (PKN) appended thereto. This structure makes it impossible to release the aforesaid data 20       without both selling company's secrecy key and the Witness' 2 secrecy key, and knowledge of the information is thus strictly limited to selling company 2 and the monitor 3.

25       Although the explanation of this illustrative embodiment does not touch upon the set-off process,

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said process can be implemented as set forth in the description of the previous illustrative embodiment.

Third Alternate Embodiment:

5        This portion of the specification describes the third alternate embodiment.

         This illustrative embodiment is directed particularly to account settlement by means of check or draft (note), and can be implemented through  
10       systems based on both the above-described preferred and first alternate embodiments. Each contingency, viz., check and draft (note), is explained below.

         Fig. 51 describes, illustratively, account settlement in the case of checks. The administration  
15       center 50 shown in said figure comprises a notarization authority 51 and the Witness 52. The administration center adopts the Witness system described above and also undertakes management of bank-issued checks. Bank X represents the transacting  
20       bank for payor/buying company 1, and bank Y represents the transacting bank for receiver/selling company 2.

         First, buying company 2 (payor) issues a check. In the illustrative case, buying company 3 (payor), wishing to issue a check in payment for goods, must  
25       obtain a check by requesting that its transacting bank

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X issue a check (see Fig. 51(1)). Bank X examines the applicant's eligibility and, when it is determined that a check ought to issue, the bank registers with the administration center 50 the issuance of a check  
5 to buying company 1 (see Fig. 51(2) and simultaneously authorizes buying company 1 to issue a check (see Fig. 51(3)).

Having so obtained the check, buying company 1 uses the check in payment for goods and tenders the  
10 check, on which are recorded the payee's name and the money amount, to selling company 2 (payee) (see Fig. 51(4)). Selling company 2 takes the check it has received to the aforesaid transacting bank X and requests payment (see Fig. 51(5)).

15 Transacting bank X inquires of the administration system regarding the check presented to it and, in addition to confirming its validity, registers said check as paid by means of a payment notification (see Fig. 51(6)). Transacting bank X thereafter utilizes  
20 an inter-bank system to move funds to the specified account at the designated transacting bank (bank Y in this illustration), and bank Y then dispatches to selling company 2 notification of collection (see Fig. 51(7)).

25 In this illustrative embodiment, the

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administration center is composed of a notarization authority and a Witness (system). The system undertakes check administration in the above-described network. Selling company 2 is the entity requesting that funds be transferred to bank Y.

#### Processing of Drafts (Notes)

This portion of the specification explains the embodiment in the case of drafts (notes).

Fig. 52 describes, illustratively, account settlement for drafts (notes). As in the check processing system, here, also, the administration center (53) is composed of a notarization authority 54 and a Witness 55. The administration center adopts the above-described Witness system and also undertakes administration of bank-issued checks. Bank X represents the transacting bank for buying company 1/payor, and bank Y represents the transacting bank for selling company 2/payee.

First, buying company 1 receives from transacting bank X authorization to issue a draft (note) (see Fig. 52(1)). Next, buying company 2 registers issuance of a draft with the administration center 53, at the time buying company desires to issue said draft (see Fig. 52(2)). The administration center 53 registers this

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information and notifies buying company 1 of the registration number (see Fig. 52(3)).

Buying company 1 adds to the registration number it has received a draw date, a drawee (payor), and a drawer (payee), and sends this information to selling company 2 (drawer) (see Fig. 52 (4)). Selling company 2 presents this draft (note) to its transacting bank, bank Y in this example, where it might request that bank Y purchase the draft (note) at a discount (see Fig. 52(5)).

Bank Y confirms the information in said draft (note) with the administration center 53 and, further, registers with the administration center 53 the fact that bank Y itself is to be the drawer (payee) (see Fig. 52(6)). Also, bank Y pays a discounted amount to selling company 2 (see Fig. 52(7)).

Lastly, as the (payment) date approaches and the draft (note) is converted into currency, a settlement demand is tendered to the issuing bank (see Fig. 52(8)), and bank X, which receives the settlement demand, uses the aforesaid inter-bank exchange system to move funds to the account at bank Y. Bank Y then provides notification of completion to the administration center 53 (see Fig. 52(9)).

The administration center 53 for processes

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executed in this illustrative embodiment comprises a notarization authority 54 and a Witness 55. The draft (note) administration flow for this illustrative embodiment, also, is performed as described above.

5 The Witness system can be used for this illustrative embodiment, as well.

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The following benefits are derived from the present invention. Through means of a single invention, the Witness stores (stores in memory/ holds  
10 in memory) and manages data relating, illustratively, to order vouchers and delivery vouchers, thus facilitating the preparation of accurate detailed payment statements. Additionally, because both Buyer and Seller can freely review detailed payment  
15 statements so prepared, it is not particularly necessary for Buyer or Seller to hold order vouchers and delivery vouchers. It is therefore unnecessary to perform the complicated task of arranging (organizing) various vouchers.

20 In contrast to conventional settlement methods wherein Buyer prepares payment details while confirming order vouchers or delivery vouchers, it is no longer necessary for Seller to undertake the difficult task of confirming said payment details.  
25 Furthermore, system safety is ensured because

eligibility to participate in the system is verified,  
and because the exchange (transfer) of information is  
executed with encoded data.

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What is claimed is:

1. A witness system, comprising  
confirmation document making means for making  
5 confirmation documents for each buyer record, based  
on a seller record, or records, sent from a seller,  
sending means for sending to the witness documents  
prepared according to said confirmation document  
making means, and for sending said documents from said  
10 witness to said seller,  
confirmation means for confirmation by said seller  
that the content of said seller record, or records,  
is in agreement with the content of said documents  
sent according to said sending means,  
15 a witness to confirm that said documents are  
accurate, when said agreement is confirmed according  
to said confirmation means, and  
memory means for storing in memory documents  
confirmed by said witness.  
20
2. A witness system according to claim 1, wherein  
a buyer makes said confirmation documents.
3. A witness system according to claim 1, wherein  
25 when said witness confirms the confirmation

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documents, said witness notifies both the buyer and seller of the confirmation.

4. A witness system according to claim 1, wherein  
5 when said confirmation documents are sent from said seller to said witness, said documents are registered, and the fact that said documents are registered is confirmed.
- 10 5 A witness system according to claim 1, wherein when said contents do not agree, as determined according to said confirmation means, said witness is notified of the substantive disagreement.
- 15 6. A witness system according to claim 1, wherein the storing in memory of said documents according to said memory means is undertaken with respect to each buyer and each seller.
- 20 7. An account settlement system, comprising notarization document making means for making notarization documents for said each buyer record, based on seller records sent from said buyer,  
25 sending means for sending to a notarization authority documents made according to said

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notarization document making means, and for sending said documents from said notarization authority to said seller,

confirmation means by which said seller confirms whether the contents of said seller records are in agreement with the contents of records sent according to said sending means,

a witness that includes a notarization authority that certifies the fact that said documents are accurate, when said substantive agreement is confirmed according to said confirmation means

memory means for storing in memory documents notarized by said witness,

detailed payment statement making means for making, with reference to said notarization documents stored in memory according to said memory means, a detailed payment statement, upon which payment to said seller by said buyer is to be based,

funds transfer request means for requesting a transfer of funds based on a detailed payment statement made according to said detailed payment statement making means, and

notification means for notifying said witness of a transfer of funds, when funds are transferred to said seller based on a funds transfer request

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according to said funds transfer request means.

8. An account settlement system using a witness system according to claim 7, wherein

5       said detailed payment statement is made in accordance with payment terms.

9. An account settlement system using a witness system according to claim 8, wherein

10       said payment terms are managed by said witness.

10. An account settlement system using a witness system according to claim 7, wherein

15       said seller checks said detailed payment statement against documents stored in memory according to said memory means.

11. An account settlement system utilizing a witness system according to claim 7, wherein

20       making of said detailed payment statement is undertaken by said buyer.

12. An account settlement system utilizing a witness system according to claim 7, wherein

25       making of said detailed payment statement is

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undertaken by said witness.

13. An account settlement system utilizing a witness system according to claim 12, wherein

5       said buyer checks said detailed payment statement in accordance with documents stored in memory according to said memory means.

14. An account settlement system utilizing the  
10       witness system according to claim 7, wherein

          when said witness system notarizes notarization documents, notification of said notarization is given to both the buyer and seller.

15       15. An account settlement system utilizing a witness system, comprising

          notarization document making means for making notarization documents for each said seller record based on seller records sent from the seller,

20       sending means for sending to a notarization authority documents made according to said notarization document making means, and for sending said documents from said notarization authority to said buyer,

25       confirmation means for confirmation by said buyer

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as to whether the contents of said buyer record are in agreement with the contents of said documents sent according to said sending means,

5 a witness to certify that said documents are accurate, when said substantive agreement is confirmed according to said confirmation means,

memory means for storing in memory documents notarized by said witness,

10 detailed payment statement making means for making by said buyer, with reference to said documents stored in memory according to said memory means, a detailed payment statement upon which payment by the buyer to the seller is based.

15 request means for requesting a financial institution to issue a check to said buyer, based on a detailed payment statement made according to said detailed payment statement making means.

20 16. An account settlement system utilizing the witness system according to claim 15, wherein

said financial institution notifies said witness when a check is issued based on said check issue request.

25 17. An account settlement system utilizing a witness

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system, comprising

notarization document making means for making  
notarization documents for said each seller record,  
based on seller records sent from the seller,

5        sending means for sending to a notarization  
authority documents made according to said  
notarization document making means, and for sending  
said documents from said notarization authority to the  
seller,

10       confirmation means for the seller to confirm  
whether the contents of said seller record are in  
agreement with the contents of said documents sent  
according to said sending means,

15       a witness to certify that said documents are  
correct, when substantive agreement between said  
documents and seller record is confirmed according to  
said confirmation means,

memory means for storing in memory documents  
notarized by said witness,

20       detailed payment statement making means for  
making, with reference to said documents stored in  
memory according to said memory means, a detailed  
payment statement upon which is based payment by said  
buyer to said seller, and

25       request means for requesting a financial

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institution to issue a note to said buyer.

18. An account settlement system utilizing a witness system according to claim 17, wherein

5        said witness is notified when said financial institution has issued a note based on said note issuance request.

10        19. An account settlement system according to claim 7, wherein

         at the time said detailed payment statement is made, set-off processing is performed when said buyer is possessed of a receivable against said seller.

15        20. A witness system according to claim 1, wherein  
         said witness confirms in advance a buyer and a seller and utilizes an authentication certificate when performing any procedure.

20        21. An account settlement system utilizing said witness system according to claim 7, wherein

         said witness confirms in advance a buyer and a seller and utilizes an authentication certificate when performing any procedure.

22. A witness system according to claim 1, wherein data transmitted among said witness, buyer, and seller, are encoded.

5 23. An account settlement system utilizing said witness system according to claim 7, wherein data transmitted among said witness, buyer, and seller, are encoded.

10 24. A witness system according to claim 20, wherein said witness notarizes said transmitted data.

25, A method for document confirmation by a witness system, comprising

15 a confirmatory document making process for making confirmatory documents for said each seller record, based on a seller record sent from a seller,

a sending process for sending to a witness documents made according to said confirmatory document, and for sending said documents from said witness to said seller,

20

a confirmation process whereby said seller confirms whether the contents of said seller record are in agreement with the contents of said documents sent according to said sending process,

25

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a notification process whereby a witness, when confirming substantive agreement according to said confirmation process, confirms that said documents are accurate and notifies said buyer and said seller of said confirmation, and

a memory process whereby said confirmed documents are stored in memory.

26. An account settlement method utilizing a witness system, comprising

a notarization document making process to make notarization documents for said each seller record, based on a seller record sent from a seller,

a sending process to send to a notarization authority documents made according to said notarization document making process,

a confirmation process whereby said seller confirms whether the contents of said seller record are in agreement with the contents of said documents sent according to said sending process,

a notification process whereby a witness notarizes that said documents are accurate and notifies said buyer and said seller of said notarization, when said substantive agreement is confirmed according to said confirmation process,

a memory process for storing in memory said notarized documents,

5 a detailed payment making process for making, with reference to said notarization documents stored in memory according to said memory process, a detailed payment statement upon which is based payment by said buyer to said seller, and

10 a funds transfer request process for requesting the transfer of funds to said seller, based on a detailed payment statement made according to said detailed payment statement making process.

27. A computer-readable memory medium containing a program causing a computer to execute the document  
15 confirmation processes performed by a witness system, comprising

a confirmatory document making process to make for each said seller record a confirmatory document, based on a seller record sent from a seller,

20 a sending process to send to a witness documents made according to said confirmatory document making process, and for sending said documents to said buyer and said seller,

25 a confirmation process whereby said seller confirms whether the contents of said seller record

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are in agreement with contents of said documents sent according to said sending process,

5 a notification process whereby a witness confirms that said documents are accurate and notifies said buyer and said seller of said confirmation, when said substantive agreement is confirmed according to said confirmation process, and

a memory process for storing in memory said confirmed documents.

10

28. A computer-readable memory medium containing a program to cause a computer to execute an account settlement process using a witness system, comprising

15 a notarization document making process for making for said each seller record a notarization document, based on a seller record sent from a seller,

a sending process for sending to a notarization authority documents made according to said notarization document making process, and for sending 20 said documents from said notarization authority to said seller,

a confirmation process whereby said seller confirms whether the contents of said seller record and the contents of said documents sent according to 25 said sending process are in agreement,

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a notification process whereby a witness notarizes the fact that said documents are accurate and notifies said buyer and said seller of said notification, when said substantive agreement is confirmed according to said confirmation process,

a memory process for storing in memory said notarized documents,

a detailed payment statement making process for making, with reference to said notarization documents stored in a memory according to said memory process, a detailed payment statement upon which is based payment by said buyer to said seller, and

a funds transfer request process for requesting that funds be transferred to said seller, based on a detailed payment statement made according to said detailed payment statement making process.

29. A witness system, comprising

first computing means for making document data, second computing means for confirming the contents of said document data, and

third computing means for storing in memory said confirmed document data, or for performing notarization of said document data.

30. A witness system according to claim 29, wherein  
said storing in a memory and substantive  
confirmation of document data are executed according  
to a screen display of said calculating means.

5

31. A witness system according to claim 29, wherein  
said document data comprise at least one of either  
a written will, written contract, written application,  
private communication, written report, or written  
summons, or a combination thereof.

10

32. A witness system according to claim 29, wherein  
said first computing means encodes the said  
document data, transmits said data to said second  
computing means through said third computing means,  
confirms the contents of and further encodes said  
data, sends said data to said third computing means,  
and

15

said third computing means further encodes the  
data sent from said second computing means and sends  
said data to said first or second computing means, or  
both.

20

25 33. A witness system according to claim 32, wherein

with respect to data transmitted among said first, second, and third computing means, a public access key for the sending side is sent in advance to the receiving side, and a receiving side public access key is sent to the transmitting side,

a message, obtained by combining

(a) a message encoded with a sender secrecy key and further encoded by DES and

10 (b) DES-decoding DEK, encoded with a receiver's public access key, is transmitted as transmission data, and, at said receiving side, said transmission data is received, DEK produced therefrom by decoding said data with a secrecy key corresponding to said public access key,

15 data encoded with DES is encoded with DEK, and

data decoded by said sender-side secrecy key is compounded by means of said sender side public access key.

20

34. An account settlement system, comprising

payment request means for making a detailed statement of a payment object and for sending a payment request, and

25 comparison means for comparing a detailed payment

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statement transmitted according to said payment request means with a seller-side sales record.

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**Abstract of the Disclosure**

5 The present invention relates to a witness system  
that takes advantage of EDI (electronic data exchange)  
to perform efficient distribution and account  
settlement (accounting) processes between selling and  
buying companies. The present invention also provides  
a system ensuring information safety and offers  
account settlement (accounting) processes utilizing  
10 said witness system. A buying company's computer 5  
makes documents according, illustratively, to delivery  
vouchers or order vouchers, and sends said documents  
to a selling company's computer 6 via a notarization  
authority 7. The selling company compares  
15 authentication documents so transmitted with,  
illustratively, delivery vouchers or order vouchers  
that the selling company itself has issued, and, after  
checking for substantive errors and determining that  
the contents of said documents are correct, executes  
20 a confirmation response with respect to the  
notarization authority. The notarization authority  
registers said documents in the witness server's 8  
receipts detail table 20 and notifies buying company  
and selling company that the notarization authority  
25 has authenticated (said documents). This structure

- makes possible the making of accurate detailed payment statements when, for example, a detailed payment statement is made or a funds transfer is executed based on confirmed data. Furthermore, the checking of said detailed payment statement by a buying company and a selling company is made simpler through reference to the above-described witness system server 8.
- 5

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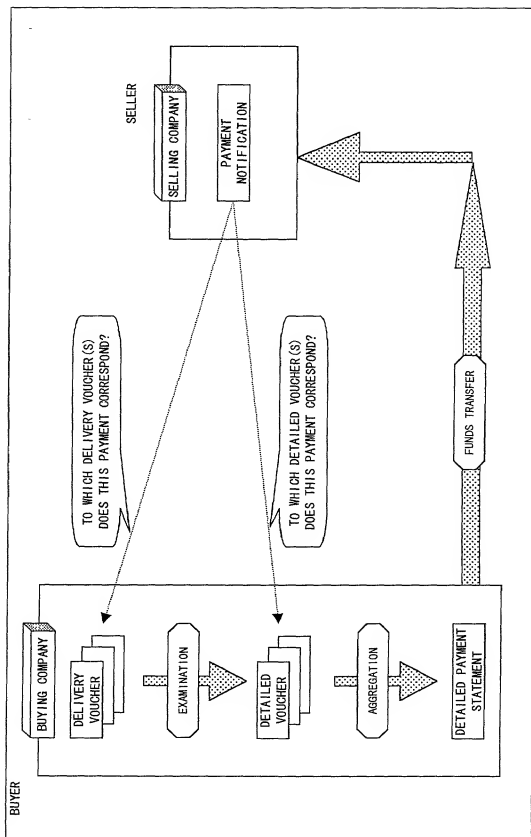


FIG. 1



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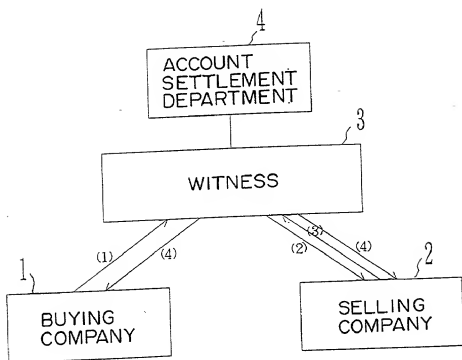


FIG. 2

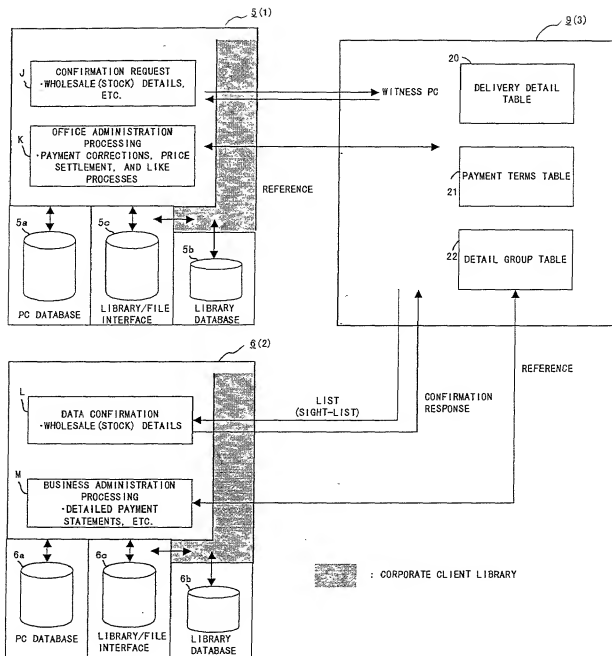
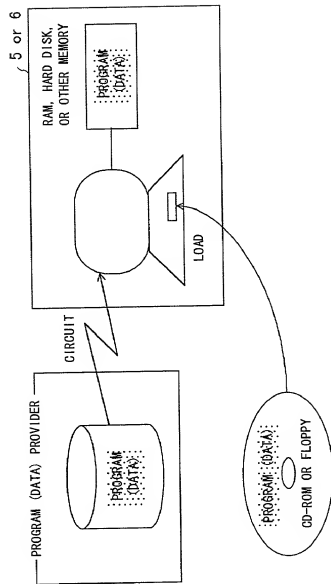


FIG. 3



F I G. 4

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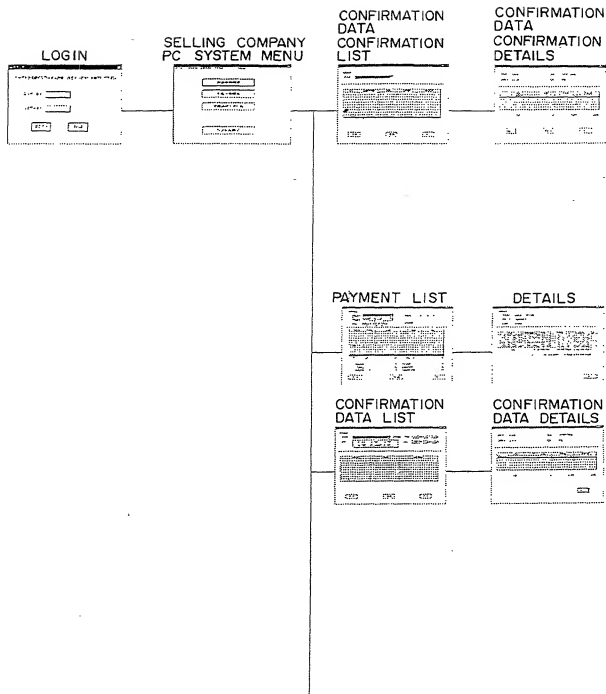


FIG. 5

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LOGIN SCREEN

The image shows a screenshot of a computer login window. The window has a title bar that reads "SELLING COMPANY PC LOGIN" with a close button (X) on the right. Inside the window, the text "AFTER ENTERING USER I. D. AND PASSWORD, PRESS THE LOGIN BUTTON" is centered. Below this text, there are two input fields. The first is labeled "USER ID :" and the second is labeled "PASSWORD :". At the bottom of the window, there are two buttons: "LOGIN" on the left and "CANCEL" on the right.

SELLING COMPANY PC LOGIN

AFTER ENTERING USER I. D. AND PASSWORD, PRESS THE LOGIN BUTTON

USER ID :

PASSWORD :

LOGIN CANCEL

FIG. 6

START MENU SCREEN

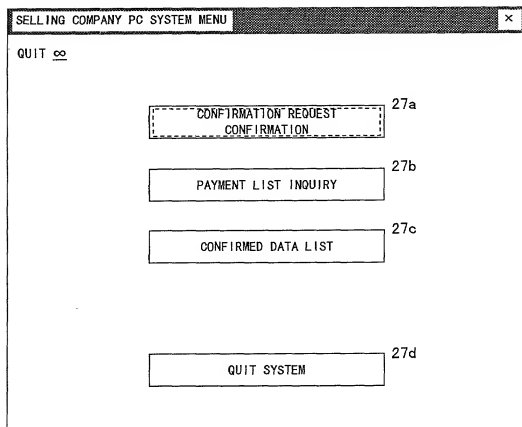
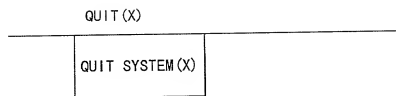


FIG. 7

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F I G . 8





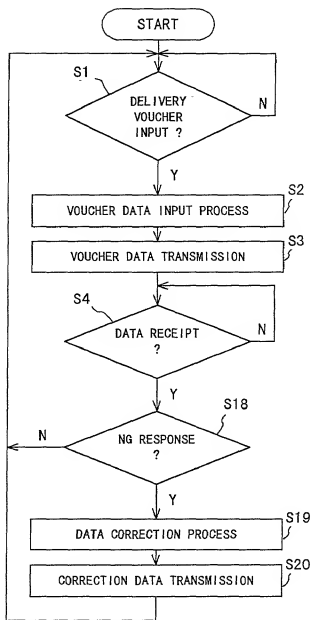


FIG. 10

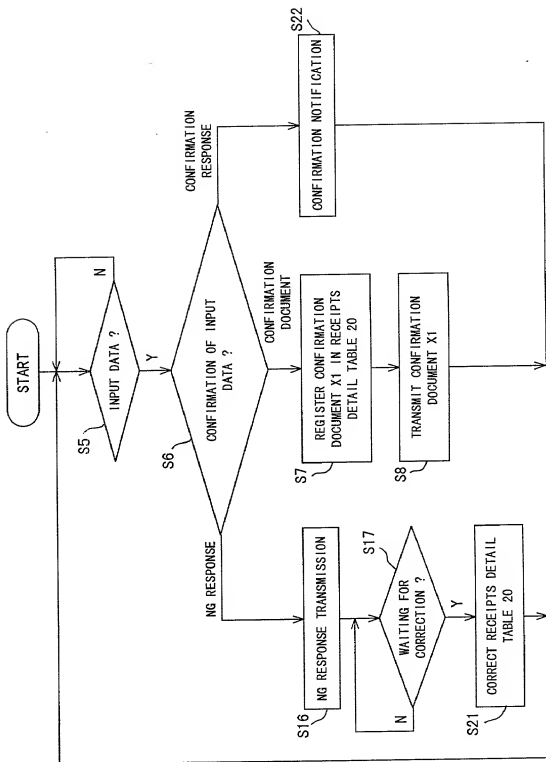


FIG. 11

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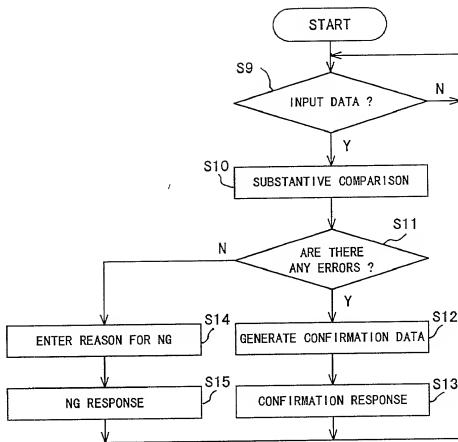


FIG. 12



86E01T\*28548160

# DATA CONFIRMATION SCREEN

DATA CONFIRMATION (DETAILS)

CUSTOMER : 660134 DATE : 1997/11/20  
 VOUCHER NO : S111111 CLASSIFICATION : ORDERS

COMMODITY BRAND NAME	QUANTITY	UNIT COST	TOTAL COST
	10	100	1,000

TOTAL 10 100 YEN 1000 YEN

41a  
 CONFIRMATION OK

41b  
 CONFIRMATION NG

QUIT

FIG. 14

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DATA CONFIRMATION

ENTER THE REASON FOR CONFIRMATION NG

OK CANCEL

42a

FIG. 15







PAYMENT LIST SCREEN

## SEARCH TERMS

PAYER : OOO FOODS COMPANY 

PAYEE : 660134 (Ltd) ☐ ☐

CLOSING DATE : 1007 / 12 / 03

PAYMENT DATE : / /

**PAYMENT COMMITMENT :**

[illegible]

**WHOLESALE**

(STOCK) TOTAL :

YEN

TOTAL WITH TAX :

YEN

BALANCE CARRIED FORWARD:

YEN

PAYMENT MONEY AMOUNT

YEN

AMOUNT DUE THIS PERIOD :

YEN

REMITTANCE FEE

MEY

CORRECTED MONEY AMOUNT :

YEN

PAYMENT MONEY AMOUNT FOR

1

## SEARCH

## DETAILS

14a

QUIT

F1G. 18

86601728518160

## DETAIL DISPLAY SCREEN

DETAIL

— □ ×

## SEARCH TERMS

PAYEE : 660134 (Ltd) △△△  
 DATE : 1997/08/12  
 VOUCHER NO. : 0970801

COMMODITY	UNIT WEIGHT	QUANTITY	UNIT COST	TOTAL COST	DISCOUNT
12345678901234567890	222, 222	999, 999, 999	44, 444, 444	6, 666, 666, 666	
12345678901234567890	222, 222	999, 999, 999	44, 444, 444	6, 666, 666, 666	
12345678901234567890	222, 222	999, 999, 999	44, 444, 444	6, 666, 666, 666	
12345678901234567890	222, 222	999, 999, 999	44, 444, 444	6, 666, 666, 666	
12345678901234567890	222, 222	999, 999, 999	44, 444, 444	6, 666, 666, 666	
12345678901234567890	222, 222	999, 999, 999	44, 444, 444	6, 666, 666, 666	

## TOTAL

5, 999, 999, 994 266, 666, 064 YEN 9, 999, 999, 998 YEN

REBATE 9, 999, 999, 994 YEN

CONSUMPTION TAX 444, 444, 444, 445 YEN

QUIT

FIG. 19

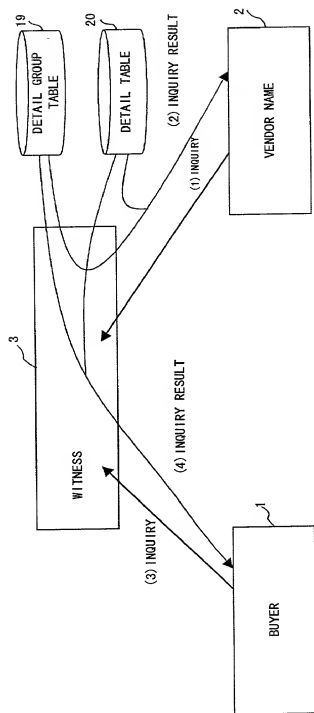


FIG. 20

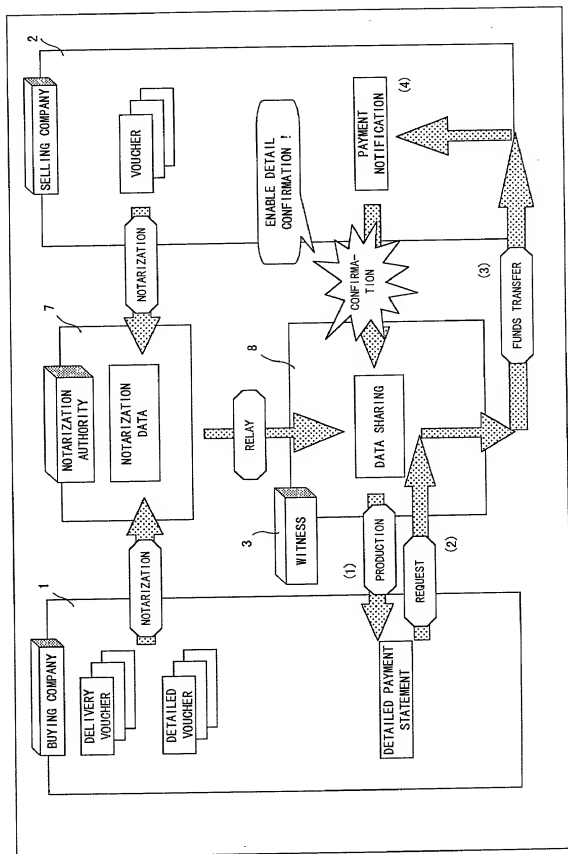


FIG. 21



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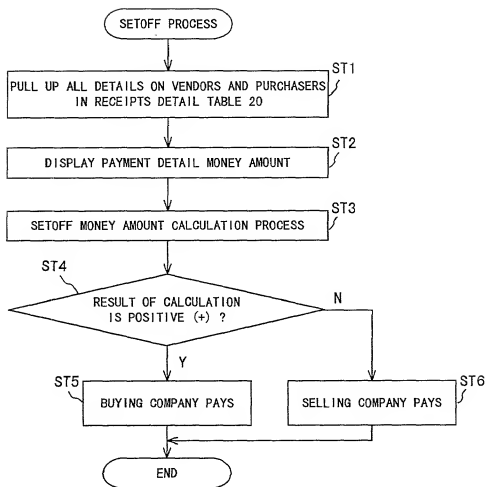


FIG. 23

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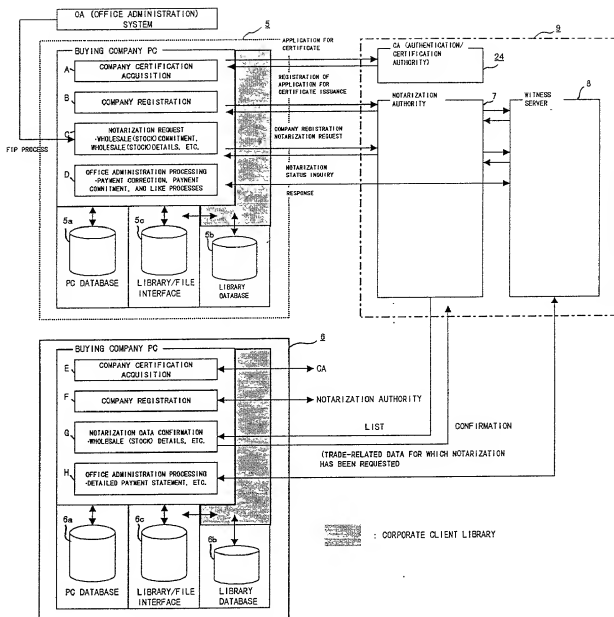


FIG. 24

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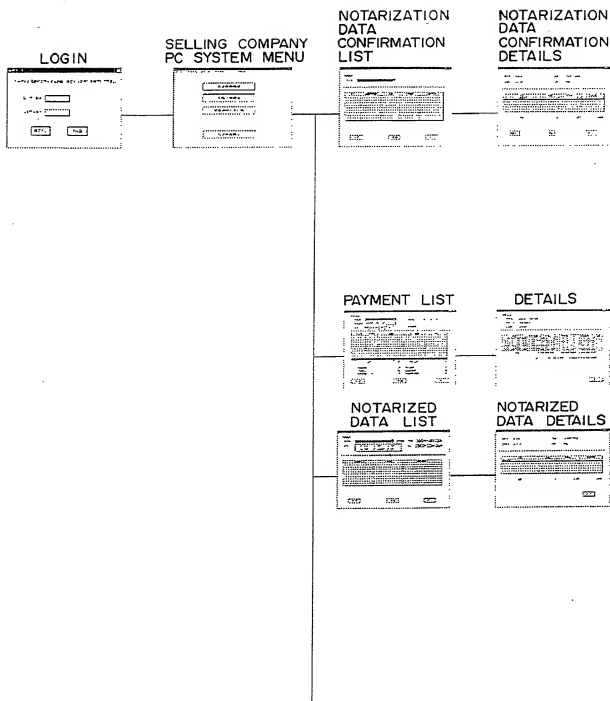


FIG. 25



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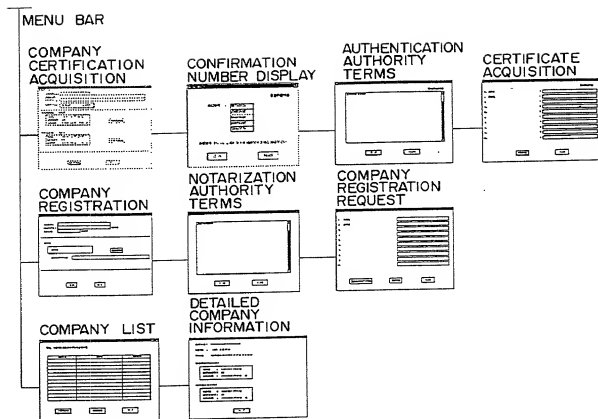


FIG. 26

LOGIN SCREEN

SELLING COMPANY PC LOGIN

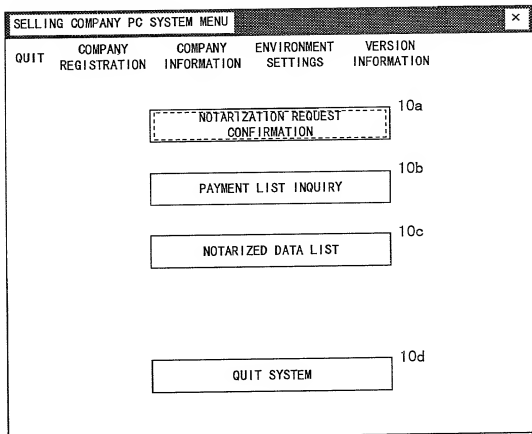
AFTER ENTERING USER ID AND PASSWORD, PRESS THE LOGIN BUTTON

USER ID :

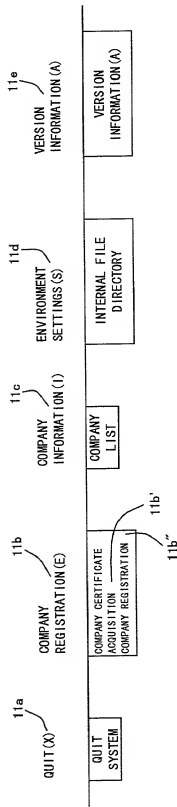
PASSWORD :

FIG. 27

START MENU SCREEN



F I G. 28



F I G. 29

## COMPANY CERTIFICATE ACQUISITION SCREEN

## COMPANY CERTIFICATE ACQUISITION

X

## APPLICATION DATA (A)

COMPANY REGISTRATION ID :  
 AUTHENTICATION AUTHORITY URL :  
 NAME OF PROXY SERVER :

CERTIFICATE TYPE :

☒ SIGNATURE   ☐ ENCODING

## SIGNATURE CERTIFICATE

## ISSUED

ISSUED DATE : 1997 / 08 / 25  
 CERTIFICATE NUMBER: 100  
 EXPIRATION : BEFORE 1997 / 08 / 25

APPLICATION STATUS  
 CONFIRMATION

## ENCODING CERTIFICATE

## ISSUED

ISSUED DATE : 1997 / 08 / 12  
 CERTIFICATE NUMBER: 200  
 EXPIRATION : BEFORE 1997 / 08 / 12

APPLICATION STATUS  
 CONFIRMATION

APPLICATION FOR:  
 CERTIFICATE

12a

QUIT

12b

FIG. 30

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# CONFIRMATION NUMBER DISPLAY SCREEN

CONFIRMATION NUMBER DISPLAY		×
		SIGNATURE CERTIFICATE
CONFIRMATION NUMBER:	7A7A7A7A	
	20202020	
	61616161	
	66666666	
	30303030	
PLEASE CONFIRM CONFIRMATION NUMBER (HASH VALUE) 40 DIGITS IN HEXADECIMAL		
NEXT	13a	CANCEL
		13b

FIG. 31

06E077'28548760

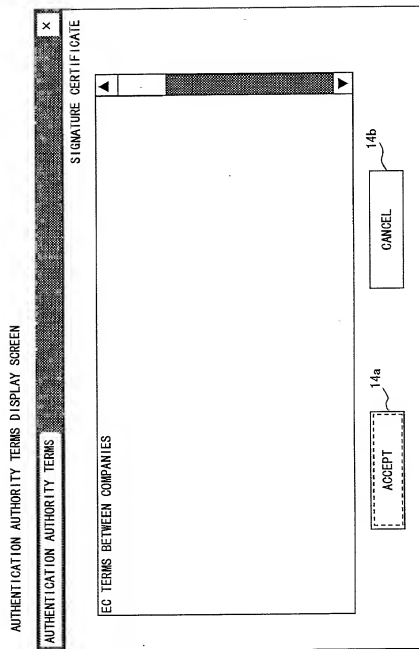


FIG. 32

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CERTIFICATE APPLICATION REQUEST SCREEN

CERTIFICATE APPLICATION REQUEST		×
		SIGNATURE CERTIFICATE
1. COMPANY NAME	:	<input type="text"/>
2. LOCATION	:	<input type="text"/>
3.	:	<input type="text"/>
4.	:	<input type="text"/>
5.	:	<input type="text"/>
6.	:	<input type="text"/>
7.	:	<input type="text"/>
8.	:	<input type="text"/>
9.	:	<input type="text"/>
10.	:	<input type="text"/>
<div>APPLICATION REQUEST</div>		<div>CANCEL</div>

15a

15b

FIG. 33



## COMPANY REGISTRATION SCREEN

COMPANY REGISTRATION		X	
NOTARIZATION AUTHORITY URL :			
NAME OF PROXY SERVER :	(MAY BE ABBREVIATED)		
WITNESS ID :		(MAY BE ABBREVIATED)	
COMPANY REGISTRATION			
COMPANY ID :			
COMPANY REGISTRATION DATA FILE NAME :	REGISTRATION STATUS CONFIRMATION		
16a	REGISTRATION	16b	QUIT

FIG. 34

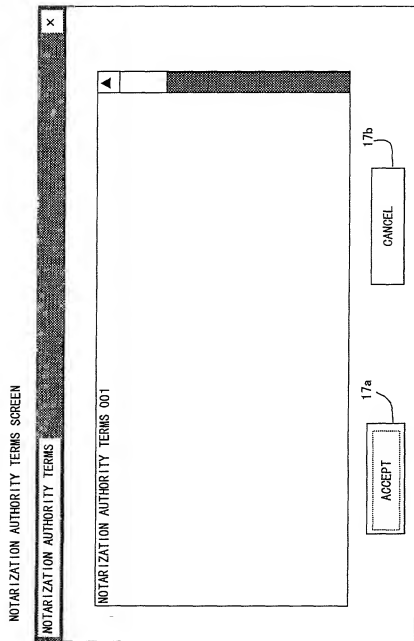


FIG. 35

## COMPANY REGISTRATION REQUEST SCREEN

COMPANY REGISTRATION REQUEST

1. LOCATION :

2. COMPANY NAME :

3. :

4. :

5. :

6. :

7. :

8. :

9. :

10. :

WITNESS APPLICATION  
DATA EDITING

REGISTRATION  
REQUEST 18a

CANCEL 18b

FIG. 36



## COMPANY DETAILED INFORMATION SCREEN

## COMPANY DETAILED INFORMATION

COMPANY ID : 00000000000000000005  
COMPANY NAME : (Ltd) ☐  
LOCATION : HOKKAIDO X X X CITY Y Y Y 9-999

## SIGNATURE CERTIFICATE INFORMATION:

ISSUED DATE : 1997 / 11 / 09  
CERTIFICATE NUMBER : 20  
EXPIRATION : BEFORE 1998 / 05 / 10

## ENCODING CERTIFICATE INFORMATION:

ISSUED DATE : 1997 / 11 / 09  
CERTIFICATE NUMBER : 21  
EXPIRATION : BEFORE 1998 / 05 / 10

QUIT

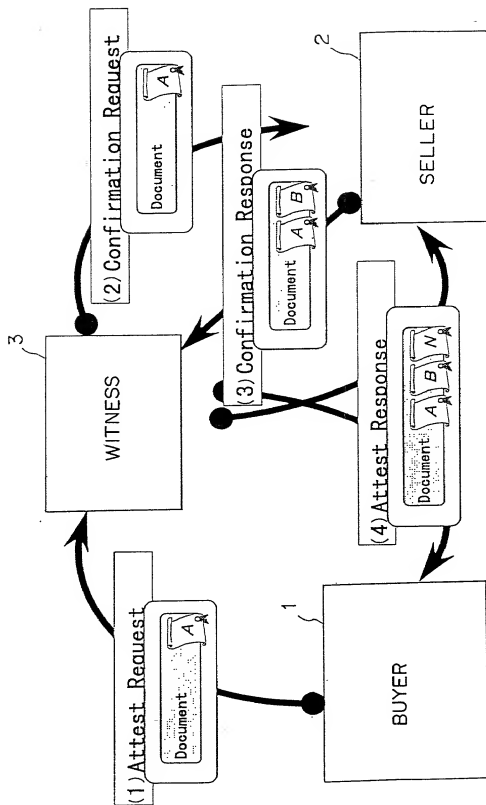


FIG. 39



Participant U  $\rightarrow$  Participant V

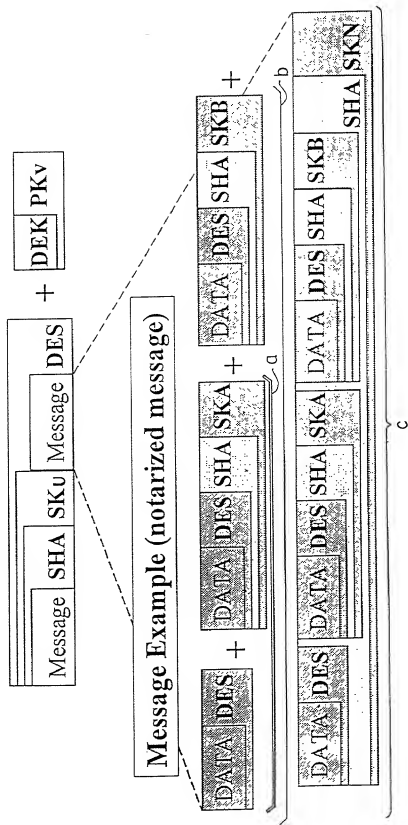


FIG. 41



NOTARIZATION DATA LIST SCREEN

NOTARIZATION DATA CONFIRMATION SCREEN (LIST DISPLAY)

## SEARCH TERMS

CUSTOMER : (Ltd) SUPERMARKET B

[illegible]

20a

## SEARCH

20b

## DETAILS

20c

QUIT

FIG. 42

86011-48548160

# NOTARIZATION DATA CONFIRMATION SCREEN

NOTARIZATION DATA CONFIRMATION (DETAILS)

— □ ×

CUSTOMER : 660134

DATE : 1997/11/20

VOUCHER NO : S111111

CLASSIFICATION : ORDERS

COMMODITY BRAND NAME	QUANTITY	UNIT COST	TOTAL COST
	10	100	1,000

TOTAL

10

100 YEN

1000 YEN

21a

CONFIRMATION OK

21b

CONFIRMATION NG

QUIT

FIG. 43

NOTARIZATION DATA CONFIRMATION

ENTER THE REASON FOR CONFIRMATION NG

OK 22a CANCEL

FIG. 44

NOTARIZED DATA LIST SCREEN

NOTARIZED DATA LIST

## SEARCH TERMS

CUSTOMER :

TILLY COO FOODS COMPANY

VOUCHER DATE : (FROM) 1997 / 12 /05

**CLASSIFICATION :**

© WHOLESALE  
(STOCK)  
○ ACCOUNTS  
RECEIVABLE

☒ WHOLESALE  
 (STOCK)  
☐ ACCOUNTS  
 RECEIVABLE

☐ SETOFF  
☐ PAYMENT  
 CORRECTION

☐ ORDERS

☐ CONTRACTS

(TO) 1997 / 12 /05

[illegible]

## SEARCH

## DETAILS

25a

QUIT

FIG. 45

86E077-2854876D

## NOTARIZED DATA DETAIL SCREEN

## NOTARIZED DATA DETAIL



CUSTOMER : 660134

DATE : 1997/11/20

VOUCHER NO : s111111

CLASSIFICATION : ORDERS

COMMODITY	QUANTITY	UNIT COST	TOTAL COST
BRAND NAME	10	100	1,000

TOTAL 10 100 YEN 1000 YEN

QUIT

FIG. 46



86E011\*28548160

## DETAIL DISPLAY SCREEN

DETAIL

— □ ×

## SEARCH TERMS

PAYEE : 660134 (Ltd) OO FOODS COMPANY  
 DATE : 1997/08/12  
 VOUCHER NO. : 0970801

COMMODITY	UNIT WEIGHT	QUANTITY	UNIT COST	TOTAL COST	DISCOUNT
12345678901234567890	222, 222	999, 999, 999	44, 444, 444	6, 666, 666, 666	
12345678901234567890	222, 222	999, 999, 999	44, 444, 444	6, 666, 666, 666	
12345678901234567890	222, 222	999, 999, 999	44, 444, 444	6, 666, 666, 666	
12345678901234567890	222, 222	999, 999, 999	44, 444, 444	6, 666, 666, 666	
12345678901234567890	222, 222	999, 999, 999	44, 444, 444	6, 666, 666, 666	
12345678901234567890	222, 222	999, 999, 999	44, 444, 444	6, 666, 666, 666	

## TOTAL

5, 999, 999, 994 286, 666, 664 YEN 9, 999, 999, 996 YEN

REBATE 9, 999, 999, 994 YEN CONSUMPTION TAX 444, 444, 444, 445 YEN

QUIT

F I G. 4 8

FIG. 49



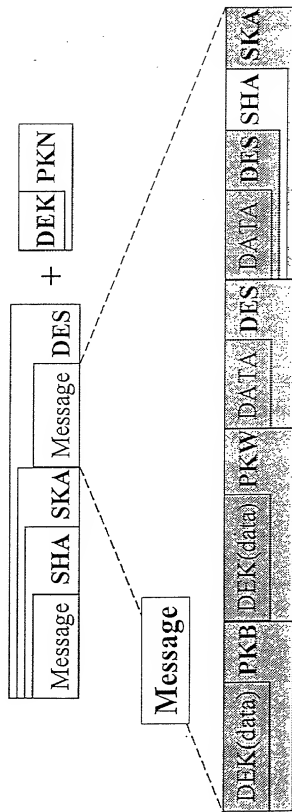


FIG. 50

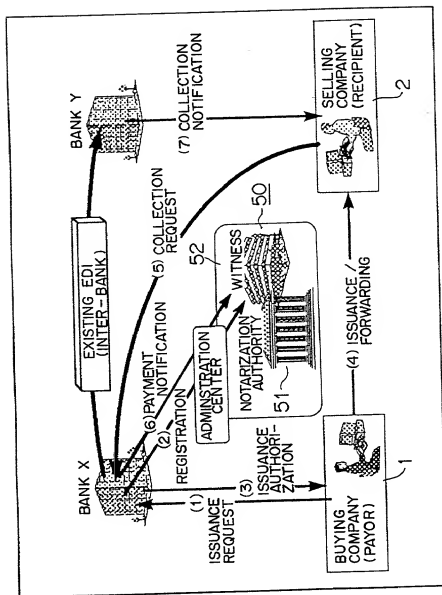


FIG. 51

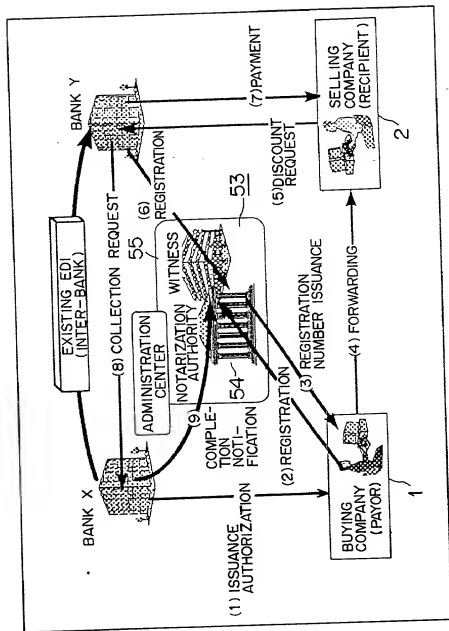


FIG. 52

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## Declaration and Power of Attorney For Patent Application

### 特許出願宣言書及び委任状

### Japanese Language Declaration

### 日本語宣言書

下の氏名の発明者として、私は以下の通り宣言します。

As a below named inventor, I hereby declare that:

私の住所、私書箱、国籍は下記の私の氏名の後に記載された通りです。

My residence, post office address and citizenship are as stated next to my name.

下記の名称の発明に関して請求範囲に記載され、特許出願している発明内容について、私が最初かつ唯一の発明者（下記の氏名が一つの場合）もしくは最初かつ共同発明者であると（下記の名称が複数の場合）信じています。

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

### WITNESS SYSTEM

上記発明の明細書（下記の欄でX印がついていない場合は、本書に添付）は、

the specification of which is attached hereto unless the following box is checked:

☐ 月 日に提出され、米国出願番号または特許協定条約  
国際出願番号を \_\_\_\_\_ とし、  
(該当する場合) \_\_\_\_\_ に訂正されました。

☐ was filed on \_\_\_\_\_  
as United States Application Number or  
PCT International Application Number  
\_\_\_\_\_ and was amended on  
\_\_\_\_\_ (if applicable).

私は、特許請求範囲を含む上記訂正後の明細書を検討し、  
内容を理解していることをここに表明します。

I hereby state that I have reviewed and understand the contents of  
the above identified specification, including the claims, as  
amended by any amendment referred to above.

私は、連邦規則法典第37編第1条56項に定義されると  
おり、特許資格の有無について重要な情報を開示する義務が  
あることを認めます。

I acknowledge the duty to disclose information which is material to  
patentability as defined in Title 37, Code of Federal Regulations,  
Section 1.56.

09184587-110398

Burden Hour Statement: This form is estimated to take 0.4 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO Commissioner of Patents and Trademarks, Washington, DC 20231.

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# Japanese Language Declaration (日本語宣言書)

私は、米国法典第 3 5 編 1 1 9 条 (a) - (d) 項又は 3 6 5 条 (b) 項に基づき下記の、米国以外の国の少なくとも一カ国を指定している特許協力条約 3 6 5 (a) 項に基づく国際出願、又は外国での特許出願もしくは発明者証の出願についての外国優先権をここに主張するとともに、優先権を主張している、本出願の前に出願された特許または発明者証の外国出願を以下に、枠内をマークすることで、示しています。

## Prior Foreign Application(s)

外国での先行出願

10-121295

(Number)

(番号)

Japan

(Country)

(国名)

30th/April/1998

(Day/Month/Year Filled)

(出願年月日)

Priority Not Claimed

優先権主張なし

☐

(Number)

(番号)

(Country)

(国名)

(Day/Month/Year Filled)

(出願年月日)

☐

私は、第 3 5 編米国法典 1 1 9 条 (e) 項に基づいて下記の米国特許出願規定に記載された権利をここに主張いたします。

I hereby claim the benefit under Title 35, United States Code, Section 119(e) of any United States provisional application(s) listed below.

(Application No.)

(出願番号)

(Filing Date)

(出願日)

(Application No.)

(出願番号)

(Filing Date)

(出願日)

私は、下記の米国法典第 3 5 編 1 2 0 条に基づいて下記の特許出願に記載された権利、又は米国を指定している特許協力条約 3 6 5 条 (c) 項に基づく権利をここに主張します。また、本出願の各請求範囲の内容が米国法典第 3 5 編 1 1 2 条第 1 項又は特許協力条約で規定された方法で先行する米国特許出願に開示されていない限り、その先行米国出願書提出日以降で本出願書の日本国内または特許協力条約国際出願提出日までの期間中に入手された、遅延規則法典第 3 7 編 1 条 5 6 項で定義された特許関係の有無に関する重要な情報について開示義務があることを認識しています。

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s), or 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code Section 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of application.

(Application No.)

(出願番号)

(Filing Date)

(出願日)

(Status: Patented, Pending, Abandoned)

(状況: 特許許可済、係属中、放棄済)

(Application No.)

(出願番号)

(Filing Date)

(出願日)

(Status: Patented, Pending, Abandoned)

(状況: 特許許可済、係属中、放棄済)

私は、私自身の知識に基づいて本宣言書中で私が行なう表明が真実であり、かつ私の入手した情報と私の信じていることに基づき表明が全て真実であると信じていること、さらに故意になされた虚偽の表明及びそれと同等の行為は米国法典第 1 8 編第 1 0 0 1 条に基づき、罰金または拘禁、もしくはその両方により処罰されること、そしてそのような故意による虚偽の表明を行なえば、出願した、又は既に許可された特許の有効性が失われることを認識し、よってここに上記のごとく宣誓を致します。

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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## Japanese Language Declaration

(日本語宣言書)

委任状 私は下記の発明者として、不出願に関する一切の  
手続を、特許庁長官に対して遂行する非理上または代理人  
として、下記の者を指名いたします。(弁護士、または代理  
人の氏名及び登録番号を明記のこと)

POWER OF ATTORNEY: As a named inventor, I hereby appoint  
the following attorney(s) and/or agent(s) to prosecute this  
application and transact all business in the Patent and Trademark  
Office connected therewith (list name and registration number)

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30,358; William F. Herbert, 31,024; Richard A. Gollhofer, 31,106; Mark J. Henry, 36,162; Gene M. Gerner II, 34,172; Michael D.  
Stein, 37,240; Paul I. Kravetz, 35,230; Gerald P. Joyce, III, 37,648; Todd E. Marlette, 35,269; Harlan B. Williams, Jr., 34,756;  
George N. Stevens, 36,338; Michael C. Soldner, P-41,455 and William M. Schertler, 35,348 (agent)

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Facsimile: 202-434-1501

唯一または第一発明者名	Full name of sole or first inventor	
	Hajime KOJIMA	
発明者の署名	Inventor's signature	Date
日付	<i>Hajime Kojima</i>	Oct. 26, 1998
住所	Residence	
	Kanagawa, Japan	
国籍	Citizenship	
	Japan	
私書箱	Post Office Address	
	c/o FUJITSU LIMITED, 1-1, Kamikodanaka 4-chome, Nakahara-ku, Kawasaki-shi, Kanagawa 211-8588, Japan	
第二共同発明者	Full name of second joint inventor, if any	
	Toshihiko KAJI	
第二共同発明者	Second inventor's signature	Date
日付	<i>Toshihiko Kaji</i>	Oct. 26, 1998
住所	Residence	
	Kanagawa, Japan	
国籍	Citizenship	
	Japan	
私書箱	Post Office Address	
	c/o FUJITSU LIMITED, 1-1, Kamikodanaka 4-chome, Nakahara-ku, Kawasaki-shi, Kanagawa 211-8588, Japan	

(第三以降の共同発明者についても同様に記載し、署名をする  
ること)

(Supply similar information and signature for third and subsequent  
joint inventors.)

09184587-110398

第三共同発明者	Full name of third joint inventor, if any Yasuharu ITO		
第三共同発明者	日付	Third inventor's signature <i>Yasuharu Ito</i>	Date Oct. 26, 1998
住 所	Residence Kanagawa, Japan		
国 籍	Citizenship Japan		
私書箱	Post Office Address c/o FUJITSU LIMITED, 1-1, Kamikodanaka 4-chome, Nakahara- ku, Kawasaki-shi, Kanagawa 211-8588 Japan		
第四共同発明者	Full name of fourth joint inventor, if any		
第四共同発明者	日付	Fourth inventor's signature	Date
住 所	Residence		
国 籍	Citizenship		
私書箱	Post Office Address		

第五共同発明者	Full name of fifth joint inventor, if any		
第五共同発明者	日付	Fifth inventor's signature	Date
住 所	Residence		
国 籍	Citizenship		
私書箱	Post Office Address		
第六共同発明者	Full name of sixth joint inventor, if any		
第六共同発明者	日付	Sixth inventor's signature	Date
住 所	Residence		
国 籍	Citizenship		
私書箱	Post Office Address		

(第七以降の共同発明者についても同様に記載し、署名をすること)

(Supply similar information and signature for seventh and subsequent joint inventors.)

09184587.110398